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REVIEW.

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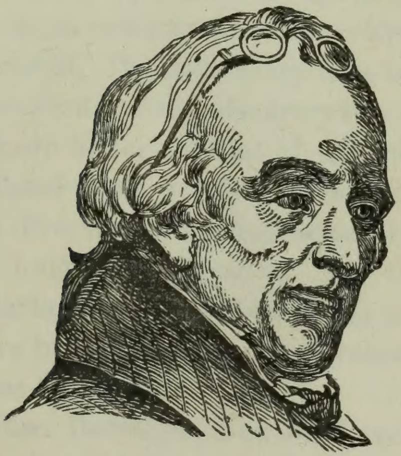

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NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

JANUARY, 1861.

Analytical and Critical Reviews.

Art. I.—*Etudes sur Vêsale, Prêcêdêes d'une Notice Historique sur sa Vie et ses Écrits; Ouvrage Publiê sous le Patronage des Mêdecins Belges.* Par Ad. Burggraeve, Professeur d'Anatomie à l'Université de Gand, etc. Gand., 1841. 8vo.

Andreæ Vesalii Opera Omnia Anat. et Chirurg. Cura Herm. Boerhaave et Bern. Sing. Albini. Lugd. Batav., 1725. 2 vols. fol.

The author of the first volume at the head of this article properly remarks that there are men who, from the grandeur and wide scope of their genius, do not belong to any particular epoch of the development of the human mind, but seem to comprise it in its entirety, and to constitute, as it were, its eternal symbol. By them every idea bearing the semblance of novelty has been conceived; every discovery has been, if not made, at least foreshadowed. Their history is that of the science to the progress of which they have devoted their powers. Such is the character of the privileged few to whom Providence has intrusted the mission of extending the sphere of the human intelligence. At their approach light assumes the place of darkness; the causes of the phenomena of the natural world and the laws by which these are governed cease to be a mystery. In a word, science is created.

Such were Bacon, Galileo, Descartes, Newton, Lavoisier, Bordeu, Bichat, etc., and such also was the renowned individual who forms the subject of these pages, Andreas Vesalius, to whose genius human anatomy is doubtless more deeply indebted than to any other of its numerous votaries. Anteriorly to him, indeed, human anatomy cannot, strictly speaking, be said to have existed. Among the ancients, contact with or the simple aspect of a dead body imparted an amount of defilement which numerous ablutions and a multitude of other expiatory practices could scarcely efface. On this point the law was in strict harmony with the precepts of religion. We read in holy writ:—

> "He that touches the dead body of any man shall be unclean seven days." "He shall purify himself with it on the third day, and on the seventh day he shall be clean; but if he purify not himself the third day, then the seventh day he shall not be clean." "Whosoever toucheth the dead body of any man that is dead, and purifieth not himself, defileth the tabernacle of the Lord; and that soul shall be cut off from Israel: because the water of separation was not sprinkled upon him, he shall be unclean; his uncleanness is yet upon him." "This is the law, when a man dieth in a tent: all that come into the tent, and all that is in the tent, shall be unclean seven days."*

We know with what zeal the Egyptians applied themselves to place the remains of their relatives and friends beyond the reach of decomposition. It is true that the process of embalming, to which they resorted for that purpose, and in which they excelled, required, on the part of the operator, the incision of the large visceral cavities, in order to introduce into these the balsamic substances used on such occasions. But from those operations the science of anatomy was not the gainer, inasmuch as they were intrusted to vulgar and ignorant men, perfectly incompetent to draw useful conclusions from what they saw. Besides, such individuals often performed their duties at the peril of their lives; for, as we learn from Diodorus Siculus, they were apt to be stoned by the populace, as if to make them pay a penalty for the profanation of which they had been guilty.

The same respect to the remains of their dead was paid by the Greeks and Romans. Influenced by the belief that the soul when released from its material envelope was compelled to roam along the shores of the Styx until the body was consigned to the earth or consumed by fire, no consideration could have induced the former to abstain from the performance of that pious duty and permit the dissection of such bodies for scientific or other purposes. It were strange, indeed, if such had not been the case. A belief of the kind and practical anatomy are antagonistic. Hence the Greek physicians and philosophers were compelled to seek such notions of the structure of the body as they desired to obtain, apart from man. Not even Hippocrates sought in the dissection of the human body a knowledge of anatomy; and if he and his countrymen succeeded in acquiring a certain amount of knowledge on the subject, that knowledge was after all only approximative, and was obtained through means of the examination of lower animals. That there existed an impossibility on the part of the Greeks to acquire a practical knowledge of anatomy we may infer from the language of Aristotle: "Sunt enim hominum inprimis incertæ atque incognitæ (partes interiores.) Quamobrem ad cæterorum animalium partes, quarum similes sunt humanæ referentes, eas contemplari debemus."*

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* Numbers, xix. 11, 12, 13, 14.

In the famous school of Alexandria, founded in the third century B.C., under the auspices of the first Ptolemies, anatomy assumed a rank among the sciences. It was publicly taught, and the dissection of the human body ceased to be an offense punishable by law. Pliny informs us that their ruling monarchs themselves studied practical anatomy: "Compartum sit in Ægypto, regibus corpora mortuorum, ad scrutandos morbos, insecantibus."†

The chiefs of this anatomical school, Herophiles and Erasistrates, to whom the science is indebted for the discovery of the lacteal or chyliferous vessels, had a large number of disciples at Smyrna, at Laodicea, and in several cities of Greece; but after their death the science retrograded, their discoveries remained sterile, and once more the dissection of the human body was abandoned. Among the Romans the example set by the school of Alexandria was not followed, and the study of practical anatomy was pursued on the lower animals; and even Galen, whose anatomical writings are the most precise, numerous, and correct of all that have descended from ancient times, very evidently abstained, as was the case also with Rufus of Ephesus, Soranus, Pelops, and others of his contemporaries or predecessors, from dissecting human subjects.

After Galen, no writer added to the store of knowledge already attained on the subject of anatomy. The science indeed retrograded still more, and continued in arrear until the renewal of letters. By the Arabs much was done to promote its advancement, if not in a practical, at least in a theoretical point of view; for although fully aware that anatomy and physiology constitute the basis of every rational system of medical instruction, and although they invariably prefaced the description of every disease by that of the parts principally affected, they were deterred, by the laws of the Koran, from dissecting the human body, and contented themselves with commenting upon the anatomical writings of Galen or with examining the bodies of lower animals.

During the middle ages the dissection of a body made after the image of the Almighty continuing to be regarded in the light of an impious act, subjecting the offender to the most severe punishment, little or nothing was done toward the advancement of anatomical knowledge. The result was natural. Knowledge was at that time confined to the monasteries. Even after the establishment of schools—for which the world was indebted to Charlemagne—priests, for a long time, alone possessed sufficient instruction to enable them to consult the writings of the ancients, or impart instruction to those around them. Now, as the Church prohibited in the strictest manner not only all bloody operations, but the dissection of the human body, severe penalties were attached to every infraction of the law. Cassiodorus, who lived in the seventh century, informs us that in his time officers were appointed for the purpose of guarding against the violation of graves. The Salic law, which was the constitution of the Francs and of other German tribes, interdicted the commerce of men to all individuals by whom a body had been exhumed, until the parents had received ample satisfaction.*

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* Hist. Animal, lib. i. cap. 16.

† Hist. Natura., lib. xix.

This state of things continued, as we have seen, not only up to the ascendency of the Arabian school, but during the period of its greatest influence, from the eleventh to the thirteenth centuries. Nevertheless, the early part of the latter century marks an era of progress; for in 1213 Frederick II., King of the Romans and of the Two Sicilies, prohibited the practice of surgery to those who had not undergone an examination on anatomy; and to facilitate the study of this branch, ordered that in the schools of Sicily and Naples a body should be publicly dissected at least every five years.† Little, however, was done toward the full execution of this law until 1306, more than half a century after the death of Frederick, when Mundinus, Professor of Anatomy in the University of Bologna, publicly dissected the body of a female. Ten years after he dissected two. But here the practice ceased. The scandal was not repeated, and Boniface IV. having launched an edict against those who ventured to violate the dignity of man by dissecting a human body, the example set by Mundinus was not followed, and the science was once more deprived of the only means calculated to insure its progress. It may be remarked that, notwithstanding the facilities which Mundinus possessed of advancing his knowledge in relation to the subject it was his province to teach, the treatise he published on anatomy, popular as it was during two centuries, is little more than a reproduction, often in obscure and misty language, of the anatomy of Galen. To form an idea of the limited extent of the knowledge that could be obtained at that time relative to the structure of the body, we need only refer to the statement of Guy de Cauliac, that the whole course of instruction was embraced in four lessons: the first, on the viscera; the second, on the nervous system; the third, on the muscles; and the fourth, on the limbs.‡

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* Lex Salica, tit. lvii. art. 5.

† Codex legem antiquarum Lindenbrogi. Francfurti, 1613.

‡ Guy de Cauliac. Anat., cap. i. doctr. 1.

It would appear also that recourse was had to dry preparations, for we are told by Mundinus that to reach the deep muscles of the extremities it is necessary to dry the body in the sun during three years.

During the two following centuries, the fourteenth and fifteenth, the progress of anatomy was very limited, if not null. The dissection of a body was considered as so extraordinary an event, that it was chronicled by contemporary writers as worthy of being transmitted to posterity. Thus we are informed, in a work published in 1546,[*] that on the 8th of February, 1429, an individual was dissected at Bergamo; and that in 1430 the uterus of a woman who died at Venice was there dissected. Nevertheless some discoveries were made at this period which go to show that the study of anatomy had not been entirely fruitless. Nothing of the kind, it is true, is to be found in the writings of Gabriel Zerli,[†] Nico Massa,[‡] John Gonthier d'Andernach,[§] Andrea Laguna,[||] etc.; for they contain nothing worthy of notice, and are besides deeply tinctured with the erroneous views of the day. But if from these we turn to Alexander Achillini, Professor of Anatomy in the University of Bologna, matters appear to assume a brighter aspect. This writer, though scarcely less than Zerli wedded to the method and prejudices of Mundinus, and a strong defender of the doctrine of Averrhoës, is entitled to an honorable mention as the discoverer of the olfactory nerves, and of two bones of the internal ear, the malleus and the incus, which he described in a work which appeared in 1516.[¶]

From the date of the publication of Achillini's work the state of ignorance here referred to began to pass away. The three great discoveries of gunpowder, printing, and the New World, which took place in the space of less than a century, imparted a new tendency to the destiny of the human species The ruling powers of the Church gave their sanction to, nay favored, the pursuit of that branch of anatomy which is indispensable to painters and sculptors. Albert Durer in 1525 published a work illustrating the symmetry of the body—of course as an artist rather than as an anatomist. Under the protection of Julius II. and Leo X., Michael Angelo, Raphael, and Leonardo da Vinci copied from nature the superficial muscles. The taste for the study of anatomy began to spread, while the public at large gradually became familiarized with the idea of human dissection. Indeed, the sixteenth century, the most prolific in great and important discoveries, may in like manner be regarded as the one in which the knowledge of the structure of the human body made the most rapid progress. Never, says the learned Sprengel, were there assembled within the same space of time so large a number of illustrious men engaged in efforts to perfect the science of anatomy, the most essential of all to those who devote themselves to the study and practice of medicine.

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[*] Ars Chirurg. Ven. fol. Apud Juntas. p. 229.

[†] Anatomia Corporis Humani. fol. Venet, 1502.

[‡] Anatomiæ Liber Introductorius. 4to. Venet, 1536.

[§] Anatomicarum Institutionum. Liber iv. 8vo. Basil, 1536.

[||] Anatomica Methodus. 8vo. Paris, 1535.

[¶] Achillini, Corporis Humani Anatomia. 4to. 1516. Annotationes Anatomicæ in Mundinum. fol. Bonon, 1522.

> "The sixteenth century had just opened, and with it the spirit of examination had begun to emancipate human reason, by freeing it from the shackles resulting from the numerous prejudices which heretofore had formed an obstacle to its progress. Among all the sciences, anatomy was one of the very first to enter the course of observation which was opening before it. The ardor displayed in its pursuit was the greater from the fact of the obstacles that had been placed in its way. Anatomical theatres were opened to the public, and could scarcely suffice to accommodate the large number of pupils that flocked therein for the purpose of enjoying a spectacle so new to them. Alexander Benedetti, who at that time taught anatomy in the University of Padua, complains of the inconvenience he experienced from the immense classes that pressed in his large lecture-room.* Another professor equally celebrated, Berengario de Carpi, informs us that from 1502 to 1527, during which he taught anatomy in the Universities of Pavia and Bologna, he dissected more than one hundred bodies.† Nevertheless, no one, up to that time, had ventured to touch the system of Galen. Everything he had taught—errors and truths—was admitted with the same religious respect. In vain was it perceived that his descriptions did not accord with the results of dissections. Convinced of his infallibility, the most hazardous supposed that the text of his works had been corrupted. Others, more fanatic, affirmed that it was nature that had changed, and that the body of man was not then constructed as it was at the time of the great physician of Pergamus. Far from aiding the progress of the science, dissections had the effect of retarding it, raising as they did, at every step, difficulties which it was impossible to remove. Who could dare to set himself up in opposition to a system admitted during the long period of fourteen hundred years? What man will be powerful enough to overthrow dogmas protected by the prescription of ages? That man will be Andreas Vesalius, a youth of twenty-three years, to whom, to use the language of Senac, will be given the privilege of discovering a new world."—*Burggraeve*, pp. 14, 15, 16.

But were we disposed to stop short of this opinion, we cannot refuse to admit with Sprengel, that, if Vesalius does not place himself at the head of all who applied themselves to anatomical pursuits during the period in which he flourished, it cannot be denied that he was the most celebrated, and is entitled, more than any other, to the thanks of posterity, as being the first to protest against the blind and slavish submission to which we have referred.

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* Alex. Bened., Phys. Anat. Bas. 1527.

† Isag. in anat. corp. hum. Bon. 1522.

This celebrated anatomist was a native of Brussels, the capital or principal city of the country which, at that time, shared with Italy the honor of being the richest and most enlightened in Europe. The day and year of his birth are not positively ascertained. According to some authorities, he came into the world on the 30th of April, 1513; while, by others, the time is affirmed to have been the 31st of December, 1514. Vesalius, like Hippocrates in ancient times, belonged to a family in which the practice and teaching of medicine was hereditary. Deriving its origin from Wesel, in the Duchy of Cleves, the family, whose name was originally Wittings, assumed that of Wesele or Wessale, which was in time transformed into Vesale or Vesalius. The father of the subject of these pages, whose Christian name was also Andreas, was attached, as apothecary, to the household of the governess of the Lower Country—the Princess Margaret, aunt to the Emperor Charles V. His grandfather, Evvrard Vesalius, acquired a high reputation for his mathematical attainments, and as the author of several medical works, among which may be cited Commentaries on Rhazes, and on the first four sections of the Aphorisms of Hippocrates. The father of Evvrard, John de Wesele, was physician to the Emperor Maximilian, and successively Professor and Rector of the University of Louvain. Finally, the father of John, Peter de Wesele, was in like manner a physician, and enjoyed as such a distinguished reputation.

Andreas Vesalius was early sent to the University of Louvain to pursue his classical studies, and there became well grounded in the Latin, Greek, and Arabic languages, as also in the physical and mathematical sciences. After the completion of these studies, Vesalius proceeded to Montpellier, and subsequently, in 1532, to Paris, for the purpose of applying himself to the acquisition of medical knowledge, and especially of devoting his attention to the study of anatomy and surgery. It must be borne in mind that, at the period mentioned, the facilities for teaching the first of these branches—anatomy—were far inferior to what they are at the present day. It is true, that in the first of these schools, whose celebrity arose principally from the fact of its being the depository of the doctrine of the Arabs, human anatomy constituted an object of serious attention. So early as the year 1376, when dissections were never resorted to in any part of Europe, save Italy, the physicians of Montpellier had obtained from the Governor of Languedoc permission to dissect annually the body of a criminal for purposes of demonstration, which permission was confirmed successively in 1377 by King Charles of Navarre, in 1396 by Charles VI. of France, and finally in 1496 by Charles VIII. Similarly restricted opportunities, were offered in Paris. But in neither place could they be of any avail; for though dissections were tolerated, they were either omitted completely or resorted to with the utmost reserve. The prejudices in relation to them had not entirely subsided, and the conscience of the anatomist was not entirely at ease respecting the kind of profanation he regarded himself as compelled to commit when he applied the knife to the human body.

> "The course (of anatomy) was limited to commentaries on Galen, to the dissection of some animals, and now and then to that of a human body, performed, in presence of the Professor, by assistants selected for those demonstrations, which were never prolonged beyond three days. Vesalius was not long in attaining a distinguished position among his fellow-students for his bold and enterprising spirit. He was frequently seen in the Cemetery of the Innocents, or on the height of Montfaucon, contending with famished dogs for a prey already in a state of putrefaction. Not less frequently did he return to the lecture-room after the demonstration, and there, taking advantage, for his own sake and that of his friends, of the superiority he had acquired, repeat the lesson, and often correct the errors, of the master. More than once Sylvius (De la Boe, at that time professor of anatomy,) re-entering the room suddenly, found the young auditory occupied in recapitulating the demonstrations under the direction of their fellow-student."—*Burggraeve*, p. 21.

It may not be uninteresting to present here a few remarks relative to the nature of the prelections of Sylvius, and the extent of the information he conveyed to his pupils. Enjoying, as he did at the time and as he continued to do a long time after, a reputation second to few, if any, and superior to most other professors of anatomy, his teachings must naturally be supposed to have been the best, or among the best, that could be obtained. Viewing them, therefore, in that light, some idea will be formed of the manner in which matters must have been conducted in those respects in the various schools of Europe, especially those of an inferior note, up to the middle of the sixteenth century. We use freely the words of a spicy contemporary. Sylvius read to his class Galen on the "Use of Parts." He began fairly, and when he had reached the middle of the first book, at the point where the anatomy commences, he said: "Gentlemen, we now come to a part too difficult for the comprehension of beginners. Were I to go through it with you we should only be bewildering each other." To save trouble, therefore, the Professor took a flying leap over all intervening matter and descended on the fifth book, through which he cantered quietly to the tenth section. From the rest of the work he made selections, to the consideration of which he either gave a single lecture, or to which he devoted five or six lessons at most. This course of professional study was illustrated sometimes with the dissection of some portion of a dog, prepared for the purpose by a surgeon under the Professor's eye. This always was thrown away on the third day, when it became unpleasant to the smell. Sylvius believed, like his brethren, that the anatomy of all flesh was contained in Galen. If he found anything in his dog that puzzled him, the fault lay always with the animal; the dog was wrong. Nay, in his endeavors to explain the discrepancies pointed out to him as existing between the condition of certain parts of the human body and the description of those same parts as given by Galen, he did not hesitate to affirm that the cause was to be sought in the fact that the human species had degenerated since the days of that great writer. Often the learned man—more used to turn over leaves than strips of muscle—blundered about his little preparation, vainly searching for some blood-vessel or tendon that he meant to show. At one of these demonstrations, witnessed by Vesalius, the Professor was so much surprised at the confused construction of the animal before him that he called on his pupil to help him through his difficulty.

Vesalius soon surpassed his teachers, one of whom, already mentioned, Gonthier d'Andernach, who had foreseen the future renown of his pupil, did not hesitate, in 1538, and when the latter had scarcely attained the twenty-fifth year of his age, to confide to him the superintendence of the publication of his works. Hence, from the outset of his career, Vesalius may be said to have proved himself the true offspring of his works. Notwithstanding the high reputation to which his masters had attained, he placed himself by their side rather as their equal than as their pupil. He aided them in their labors, and detected errors which the former, following as they continued to do a blind routine, did not cease to commit in their lectures and writings.

In consequence of the war which broke out between Charles V. and Francis I., Vesalius was obliged to leave Paris, and, returning to Louvain, soon obtained permission to deliver public lectures on anatomy.

Toward the year 1535, Vesalius, who, although little more than twenty years of age, was attached in a professional capacity to the army of Charles V., revisited France, and had there an opportunity of dissecting, for the first time, a human body; for heretofore he had assisted but twice at operations of the kind while prosecuting his studies in Paris. Thence he proceeded to Italy, and in 1537 was invited by the Senate of Venice to the Chair of Anatomy in the University of Padua. Vesalius had long before perceived that the descriptions of Galen did not accord with the results obtained from the dissections of the human body; but distrusting the testimony of his own eyes, he feared lest he might be laboring under the effect of an error of observation. Thus he informs us that he had already commented, three times in his lectures, upon the work of the Greek physician, without daring to point out the numerous errors he had discovered it to contain. Such was the strength of the faith he reposed in the man whom he considered, after Hippocrates, as the greatest and most infallible of physicians! But when his opportunities for dissection were greatly multiplied, when he was enabled to compare the human body with those of lower animals, he could no longer resist the evidence of the facts which presented themselves to his observation; and came to the conclusion that the anatomy of Galen has no relation whatsoever to the human body, but to that of the mammifera which approximate most to man in point of structure—the monkeys. Perceiving this, he lost all confidence in an authority which had so long been his guide, and determined to investigate the entire structure of the human frame and reconstrue the science of anatomy. In view of this, each part was examined with extreme care, and every time he discovered anything which did not accord with the text of Galen, he noted it on the margin of the volume. In this way was composed his great work on anatomy, the production of a youth of twenty-eight, which was designed to revolutionize completely the science and give it the impulse it has continued to this day to obey.

Vesalius resided seven years in Italy. During this period he taught anatomy, not only in Padua, where, as we have seen, he had been invited, but also in Bologna and Pisa. To the latter place he proceeded, at the solicitation of the Grand Duke of Tuscany, Cosmo de Medici, not with a view to add much to his pecuniary resources, the salary being only 600 crowns, but in consequence of the facilities he was there promised in the prosecution of his favorite researches. In this way he was not attached exclusively to either of those establishments, but passed from one to the other to deliver in each a course of lectures, which usually occupied seven weeks.

Of the talents and success of Vesalius as a teacher, Henry Morley, in his delightful biography of Cardano—a work in which he has embodied a mass of interesting materials, collected from a variety of sources—speaks in high terms. Vesalius, he says, was perhaps the only medical teacher in Italy who was then able to fill his lecture-room. He had a stimulating subject. His dissections of real human bodies attracted the curious as much as the inquiring. He was a man of the world, too, strong-willed, and, perhaps, overbearing in his temper, but of courteous habits; young, handsome, well-dressed, affable, and a fluent speaker, master of an admirable style.*

The intervals between these courses of lectures he spent at Venice. There he prosecuted with indefatigable zeal his anatomical studies, at the same time practicing medicine and surgery, and devoting much attention to the composition of his work; which, though commenced during his professorship at Padua, did not see the light till the year 1543, in consequence of the extreme care he devoted to the confection of the plates.* Resigning his professorship, he proceeded to Bâle, where his work was being printed, and next returned to his native country, where he had been invited by the emperor. Soon after his arrival he was sent, as surgeon, to the army (1543), and made some stay at Nimeguen, to attend on the Legate of Venice, who was there confined by a severe illness; and thence proceeded to Ratisbon to join the emperor. He there published a dissertation on the virtues and properties of the china (Smilax china) through means of which the emperor had been restored to health. It may be remarked, that this dissertation is rather a work of criticism than one of materia medica; for the observations relative to the plant occupy a smaller space than the defense of the author against the attacks of his antagonists.†

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* The Life of Girolamo Cardano, of Milan, Physician, vol. ii. pp. 16, 17.

His work on anatomy, which, as already seen, was published this same year, produced a great sensation, and its appearance was the signal of the most violent attacks. This result could not but be anticipated by the author and his friends; for his views and tendencies were well known, as they had been proclaimed in his lectures, and none was ignorant of the fact that they were of a nature to compromise the reputation of many men occupying high positions in the medical hierarchy.

In a small manual of anatomy‡ which he published at this time, and dedicated to Prince Philip, son of Charles V., and which was intended as a kind of prospectus or *table raisonnée* of his great work, he endeavored to prepare the public for the innovations he was about therein to introduce in the science. Finally, in the dedication to the emperor, of the work itself, he explains the necessity for a new treatise on anatomy, and on the right he possessed of preparing it. "Son, grandson, and great-grandson of distinguished physicians, it became me to accomplish that task, at the risk of remaining a stranger to the scientific movement which commenced with your reign, and of rendering myself unworthy of my noble ancestors." He recalls his efforts and laborious researches, and exclaims, "Never would I have become an anatomist had I, while studying medicine in Paris, failed to apply myself to dissections, and contented myself with the clumsy manipulations of ignorant surgeons." After enumerating his labors at Louvain, Padua, Bologna, and Pisa, and alluding to the praises he there received, he remarks:—

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* De Humani corporis fabrica, libri vii. Bas. 1543.

† Epistola ad Ioachimum Roëlants, etc., rationem modumque propinandi radicis chynæ decocti, quo super invictissimus Carolus V. imperator usus est, pertractans, et præter alia quædam, etc. Ratisb. 1546.

‡ De humani corporis fabrica librorum epitome. fol. Basilæ, 1542.

"There, also, shaking off the shackles of teachers and schools, I have endeavored to demonstrate man as man himself. Indeed, where would have been the use of seeking this knowledge in books? Of all that Herophiles, Erasistrates, Marinus, and many other illustrious authors have written, scarcely a few fragments remain; and as to those who have followed Galen, Oribasius, Theophiles, the Arabs, and our moderns, (admitting that they have left behind them something worthy of being read,) they have all contented themselves with compiling, commenting upon, and most frequently disfiguring him in the most ridiculous manner. Is this the respect due to a great writer? Is it in perpetuating his errors that we can pretend to preserve his memory unsullied? What have I done to justify my being accused of having calumniated him? I have always done him justice; but instead of imitating the generality of our physicians, who cannot discover any errors in his works, although Galen often corrects himself—pointing out in one part mistakes committed in others—instead, I say, of following blindly this deplorable example, I have opposed his opinions, and shown, proofs in hand, that the physician of Pergamus dissected not the human body, but the lower animals—particularly monkeys. In this respect Galen was not guilty, since he was deterred by a prejudice stronger than his good intention or genius. The guilty are those who, having the human organs under their eyes, obstinately copy in a servile manner the errors of their idol."

In reference to the mode of teaching anatomy as pursued by the professors of the times, he exclaims:—

"What shall we say of those teachers who from the rostrum repeat emphatically, like so many parrots, what they have learned in books, without even having themselves made a single observation; or who lecture on preparations so monstrously defective, that their spectators would learn much more from a butcher at the stall? *Ita quoque spectatoribus in illo tumultu pauciora prœponuntur quam lanius in macello medicum docere posset.*"

"However," he adds, "I am aware that having scarcely accomplished my twenty-eighth year, I shall be regarded as very bold to attack the physician of Pergamus. I feel that I shall be exposed to the stings of those who have not, like myself, studied anatomy conscientiously; and who, although old and bent by age, preserve at the bottom of their hearts sufficient gall not to pardon a young man for having discovered and demonstrated what they, who represent themselves as masters in the science, have not seen."

Among the opponents whom Vesalius encountered on the occasion, one of the bitterest was his old master, Sylvius De le Boe, who could not brook the idea of being convicted of having all along entertained and taught the most erroneous views; and that, too, through the instrumentality of one whom he considered as a mere boy. Besides, Sylvius felt incensed at perceiving that an individual could be bold enough to impugn the infallibility of Galen. This celebrated individual is described by Cardano, in an account of a dinner they sat to in company with Fernelius, as a merry old man of seventy, quite bald, quite little, and full of jokes. As already seen, he was of the old school—worshiping Galen—teaching anatomy from small fragments of dogs, and omitting from his teachings whatever was at all difficult, even in the authority he worshiped. Sylvius, who was furiously endeavoring to hunt down his old pupil Vesalius, as an impious confuter of the word of Galen, followed him to Madrid with his hate, and sought to bribe a Madrid State physician, Cornelius Barstrop, with the promise of a baby's skeleton, if he would join the chase. Persecution of Vesalius had become the topmost thought of his old age, and he could not of course dine with a strange doctor without mounting on his hobby. "He was breathing animosity against Vesalius, says Cardano, arising I know not from what cause. He professed, indeed, that it was for wrongs done to Galen; and he demanded a most iniquitous thing, that I, too, should become his enemy."* In the excess of his wrath, Sylvius published a pamphlet, entitled *Sylvius Væsani Calumnius deplusandus*, in which, taking in hand the defense of Galen, he brands his old pupil with the epithets of calumniator, impious turn-coat, points him out as a monster whose impure breath was poisoning Europe, and descends so low as to launch against him a miserable play of words, which, as some writers properly remark, is fortunately untranslatable. "Vesalius non esse, sed Vesanum." A much more dangerous adversary was found in Eustachius, Professor of Anatomy in the University of Rome, who, like Sylvius, constituted himself the defender of Galen; but who, instead of combating, like the other, his antagonist by heaping abuses upon him or turning him into ridicule, endeavored to overthrow his views by an appeal to facts and arguments.†

Attacks of the sort, proceeding from a man universally and deservedly recognized as one of the first anatomists of the age, naturally called for an answer. For this purpose Vesalius once more visited Italy, in order to demonstrate publicly the erroneousness of the charges brought against him. The University of Padua, where he first proceeded, placed at his disposal all the dead bodies required for his demonstrations. He then summoned his opponents, inviting them by a public notice to that effect, to make their own dissections from his subject, and state their objections, and expressing his readiness to answer these. Need it be added that his triumph was complete—not a man venturing to accept the challenge—and that henceforward no one could deny the correctness of the facts he exposed to light? From Padua Vesalius went to Pisa and Bologna, in each of which places he obtained an equal success.

But while such was the result of his visit to Italy, the clamors and every-day accusations of Sylvius and other worshipers of Galen spread over Europe, and revived the prejudices of the public against the dissection of the human body. The excitement produced in the matter became indeed so great that the emperor thought himself under the necessity of ordering an investigation into the contents and tendencies of the incriminated work, and of insuring, if necessary, its censure by the proper authorities. The theologians of Salamanca were summoned to decide the question whether Catholics were permitted to open dead human bodies? Fortunately for Vesalius and for science, the answer of the Spanish monks was in the affirmative.

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* Morley, op. cit., vol. ii. pp. 100, 101.

† Eust. Tract. de Ven. Azyg.

On being apprised of the order issued by the emperor, Vesalius determined to quit Italy; and immediately, as we learn from Haller, consigned to the flames, in the excess of his mortification, his books and manuscripts. In this way, we are told, were lost a huge volume of annotations upon Galen, a whole book of medical formulæ, many original notes upon drugs, the copy of Galen from which he lectured, covered with marginal notes of new observations that had occurred to him while demonstrating, the paraphrase of the books of Rhazes, presently to be mentioned, etc. That Vesalius soon repented of his deed, we have every reason to believe. But it was too late; the sacrifice was consummated, and with a bleeding heart he retired to Brussels, where he lived for some time in the utmost seclusion. In 1546 he proceeded to Bâle, and there remained long enough to superintend the reprinting of his work, occupying a few hours each day in giving demonstrations in anatomy. In return for the kind reception he there met with, he presented to the medical school of Bâle a skeleton, which is still (or was until lately) preserved therein with religious care, and over which was placed a complimentary inscription. On the abdication of Charles V., Vesalius followed Philip II. to Spain in the capacity of court physician.

From this period may be dated the close of the scientific career of the great anatomist. Thrown in the midst of a court, gloomy and swayed by prejudices, he was far, notwithstanding the respectful consideration with which he was treated, from leading a happy and tranquil life. According to some historians, he became the subject of annoyances on the part of the physicians by whom he was surrounded, who viewed with feelings of jealousy the professional eminence which he, a stranger among them, was enjoying; and did all in their power to drive him away or tarnish his fame. Boerhaave and Albinus also inform us that Vesalius was equally annoyed by the Spanish monks, who made him pay dear for the jests be continually leveled against them on the score of their ignorance, their costume, and their morals. Under the impression of these influences, he became discouraged, depressed, and indifferent to passing events. Another circumstance tended to increase this painful mental condition. Since his arrival in Spain, the impulse he had imparted to anatomy in Italy had considerably increased. In 1562, Francis Puteus, of Vercelli, ranging himself, in a work addressed to him,* among the warmest admirers of Galen, attempted to defend the latter, and to show that he was wrongfully accused of not having dissected human subjects. About the same time the distinguished pupil of Vesalius, Fallopius, who, all things considered, may be regarded as the greatest anatomist of the sixteenth century, published his *Anatomical Observations*, a kind of repertory or critical examination of all that had been previously written on the subject of anatomy, and in which the author, while recording his own discoveries, points out, though in the most respectful manner, the inaccuracies of his illustrious master. Against the statements, criticisms, and aspersions of Puteus, Vesalius defended himself in a pamphlet which was published in 1565, under the assumed name of *Gab. Cuneus*,† and the authorship of which is ascribed to him by his friend and contemporary Cardano.

The above-mentioned work of Fallopius recalled to the mind of Vesalius thoughts of an agreeable, and, at the same time, painful character. It made him revert, as he says in an examination of the work, which he addressed to Fallopius himself, to a period full of glory, when he recognized no master but science, no ambition but its progress—to that period when the whole of Italy applauded his success. He exhibits a contrast between that period and the present, when he no longer possessed the means of keeping himself on a level with the state of the science he had created, and besides experienced the mortification of seeing himself surpassed by his own pupils, without the possibility of his being near by to direct their labors and to rejoice in their progress. He does not conceal his desire of being able to resume his favorite studies, and, in conclusion, remarks:—

> "I hope, should I have, some day, the opportunity of performing dissections—an opportunity which is completely denied me here, where I have not been able to obtain a cranium—I hope, I say, to go over the structure of the entire body, and to review my entire work."

In the composition of this work, which appeared in 1564,‡ Vesalius fell, in some respects, far short of the high reputation he had attained, as is fully admitted by his two illustrious editors, Boerhaave and Albinus: "Aulicis obnoxius, toteis obsequiis, hæret cerebro, vera negat, sœpè minus proba asserit," etc. Nevertheless, he very naturally attached a considerable importance to the publication of what he viewed as a satisfactory vindication of his anatomy, and intrusted the manuscript to the Ambassador of Venice, Paul Tiepolo, with the request that he would place it in the hands of Fallopius, at Padua. But being retained in Spain by the events of the war, Tiepolo did not reach Venice till the next year, when, being informed of the death of Fallopius, he kept and made no use of the manuscript, which was soon after obtained by the author while at Venice on his way to Jerusalem.

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* Putei apologia pro Galeno. 8vo. Venet, 1562.

† Gab. Cunei Midiolanensis apologiæ Fransc. Putei pro Galeno anatome examen.

‡ Anatomicarum Gabrielis Fallopii Observationum Examen. Venet, 1564. 4to.

This incident increased the mental dejection of Vesalius, and excited in him the desire of returning to Italy—that native focus of genius, as he calls it, *engeniorum vera altrix*—with a view to defend his reputation, which he thought compromised by the writings of Fallopius. But to leave Spain was matter of no little difficulty, inasmuch as the authorization of Philip II. was required; and the latter, who appreciated fully the importance of the professional services of the great surgeon, was not likely to consent readily to his transferring his residence elsewhere. The only means of effecting the object in question, which offered a prospect of success, was to pretext a desire of fulfilling a religious vow of a pilgrimage to the Holy Land. To this effect permission was sought and finally obtained, and as soon as the preparations for the long journey were made, Vesalius quitted Madrid and proceeded to Venice, where, in company with J. Malatesta de Remini, General of the Republic, he embarked for Cyprus, and thence for Jerusalem.

While there, he received from the Senate of Venice the offer of the chair of anatomy in the school of Padua, left vacant by the death of Fallopius. This offer he gladly accepted, rejoicing in the thought of returning to Italy, and in the prospect of being, at the age of only fifty-eight, able to devote himself once more to scientific pursuits. Quitting Jerusalem, Vesalius embarked for Venice; but the vessel in which he had taken passage was wrecked, on the 2d of October, 1564, on the coast of the Island of Zanthe, where he soon after died. A jeweler, by whom he was recognized, caused him to be buried in a chapel dedicated to the Virgin, and placed over his tomb the following inscription:—

ANDREÆ VESALII BRUXELLENSIS TUMULUS,
QUI OBIIT IDIBUS OCTOBRIS,
ANNO 1564,
ÆTATIS VERO SUÆ QUINQUAGESIMO,
QUUM HIEROSOLIMIS REDIISSET.

Thus, says M. Burggraeve, perished, a victim of his love of science, the extraordinary man who created a science the most vast of all, at a period when every sort of obstacle was thrown in the way of its progress—the man whose entire life was nothing but a long struggle between knowledge and ignorance, between truth and error. He had quitted Spain, not for the purpose of escaping the consequences of a disgraceful condemnation, but to resume the active and laborious life incident to scientific pursuits and professional duties. God only knows how far this ardent genius would have pushed anatomy, seeing that, at the very outset of his career, unaided and amid the most adverse circumstances, he brought it nearly to a state of perfection.

By biographers and historians a number of statements having reference to the position occupied by Vesalius in Spain, to the causes of the difficulties he there encountered, and to the circumstances which led to his pilgrimage to the Holy Land, have been recorded. Several of them, and the last more particularly, deserve to be examined, in order to ascertain how far they are entitled to belief. Thus it is stated that at the close of the year 1543, or the beginning of the following, Vesalius was called to the Court of Charles V., in the capacity of his protomedico or first physician; that he followed the emperor as such to Madrid; and that when this sovereign, weary of the responsibilities of the empire, abdicated, his son and successor to the throne of Spain, Philip II., retained Vesalius in the same position near his person, and honored him with his entire confidence.

It is also mentioned that the Infant Don Carlos, son of Philip II., was attended and cured of an attack of cerebral compression, the result of a fall on the head, by Vesalius, who, in opposition to the decided opinion of the consulting physicians, resorted to the trephine; that his success on this occasion secured him still more firmly the entire confidence of the king, and that this, exciting the jealousy of the Spanish physicians, gave rise to the persecutions he subsequently experienced at their hands.

Again it is stated that Vesalius had the misfortune to open the body of a gentleman whom he erroneously supposed to be dead; that the nature of the disease under which the individual had labored being of an obscure character, permission was sought and obtained to make the examination; that on touching the heart with the end of his scalpel, this organ, which still preserved a marked degree of vitality, contracted; that he was prosecuted by the relations of the deceased, on a charge of homicide and impiety, before the ordinary courts and the tribunal of the Inquisition, by which he was condemned to death, and that this condemnation was, by Philip II., commuted to an expiatory pilgrimage to the Holy Land.

On each of these points we shall make a few comments.

In regard to the first, it may be remarked that the fact to which it refers—the appointment of Vesalius to the post of protomedico to the

Emperor Charles V., and to his successor to the Spanish throne—is far from being well authenticated. That, in 1543, he obtained an honorable post at the court of the emperor and in the army; and that after the abdication of this sovereign, he followed Philip to Spain, are circumstances which have just been noted. But nothing shows that the post he thus held amounted to that of protomedico. Had Vesalius been the personal ordinary medical attendant of the emperor, he would scarcely have been sent in the year of his appointment to the army in the capacity of surgeon, and allowed to remain some time, at Nimeguen, in attendance on the Venetian Legate. Nor would he have gone to Italy to combat Eustachius and his other opponents. Again, he would not, had he held the appointment in question, have been subjected to the mortification of seeing his work referred to the theologians of Salamanca; nor, in the supposition of such a reference having really been made, would he have continued to hold the appointment. Further than this: it is not probable that in the event of his being protomedico of the emperor, he would, on hearing of the reference, have removed to and lived in retirement in Brussels, and have resided a sufficient time in 1546 at Bâle to superintend the republication of his work.

Independently of this, it must be remembered that Vesalius does not assume the title of protomedico of the emperor, or, subsequently, of the king, on the title-page of any of his works, which he would certainly have done had he occupied the post. Had he really been the head medical attendant on Charles, and enjoyed the confidence of the sovereign, he would, in all probability, have followed him to the Monastery of St. Yust in the place of Henrico Matisio, who remained there during the two years of the sojourn of the emperor, and attended him in his last illness. At any rate, he would have been called in consultation, as was the case with D. Cornelio, physician of the Queen Donna Maria, who resided in Valladolid. Again, he would, in all probability, have been among the earliest of the medical attendants, if not the very first, called in to attend the king's son under circumstances presently to be mentioned; whereas, as we shall see, such was not the case. Finally, the signature of Vesalius, as *President*, would be found at the bottom of the ordinances of the Council of Health.

The second statement of which mention has been made—that relative to the agency of Vesalius in the cure of Don Carlos, the operation to which he resorted to attain that object, and the effect his success occasioned—rests on doubtful grounds. Of the accident which befell the prince mention is made, in more or less details, by all the historians and many other writers of the times. It is recorded in the dispatches of the French Ambassadors, Guibert and St. Sulpice, and is described in the accounts of the case drawn up by Daza and Olivares, the surgical and medical attendants on the occasion. Guibert writes, April 3, 1562:—

"'The fever has left the prince, and his health improves, although, in consequence of his foolish doings, symptoms of his former malady remain behind. This will all be removed as the summer advances.' This hope was, however, completely frustrated, when Carlos had his heavy fall down stairs at Alcala. The same writer says, May 15, 1562: 'The lamentation, perplexity, and despair of the king and his suite is incredible. Don Carlos fell head foremost down a dark stair, which he would descend alone and secretly, in search of a young daughter of a porter in the garden, whom he admired. The surgeons, not satisfied with bandaging the wound, have enlarged it.' The new French Ambassador, St. Sulpice, writes, May tenth, from Burgos: 'They mean to trepan the prince, and have ordered solemn processions and prayers for his recovery.'"*

Mr. Prescott, who follows the statement of Dr. Olivares, one of the physicians of the Prince, says:—

"One evening in April, 1562, as he was descending a flight of stairs, he made a misstep, and fell headlong, down five or six stairs, against a door at the bottom of the passage. He was taken up senseless and removed to his chamber, where his physicians were instantly summoned, and the necessary remedies applied. At first it seemed only a simple contusion on the head, and the applications of the doctors had the desired effect. But soon the symptoms became more alarming: fever set in; he was attacked by erysipelas; his head swelled to an enormous size; he became totally blind, and this was followed by delirium. It now appeared that the skull was fractured. The royal physicians were called in, and, after a stormy consultation, in which the doctors differed, as usual, as to the remedies to be applied, it was determined to trepan the patient. The operation was carefully performed; a part of the bone of the skull was removed; but relief was not obtained."†

Another still more different account of the case was published fifty-eight years after the occurrence, by Melchior Adams. We give it entire.‡

"Philip II. of Spain had a son, Charles, (Don Carlos,) grandson of the Emperor Charles V. This youth had been ordered change of air, upon an attack of intermittent fever. During this retreat, he one day éspied a young lady of rank sitting in a certain noble residence, employed in weaving flowers into a wreath. In mere sport, the young prince ran toward her; the noble maiden flew to her chamber, and drew the bolt behind her. The youth thereupon being only the more excited in his sport, broke open with main force the door, and fell headlong down the stairway which was immediately behind it, receiving in his fall a very severe wound upon the head. Surgeons were immediately called in. They bound up the wound; but being intent only upon healing the wound, they took no pains to allow the extravasated blood to escape. The consequence was that the whole head became uncommonly swollen, and the prince was lying like one that had been struck with apoplexy.

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* Raumer, Hist. of the Sixteenth and Seventeenth Centuries, vol. i. p. 127. 8vo. From Bib. Roy. MSS., Nos. 9746, 9748.

† Relacion de la enformedad del Principe por al Doctor Olivares. Documentos Inéditos, tome xv. p. 554. Prescott's Hist. of Philip II., vol. ii. p. 517.

‡ Vitæ Germanorum Medicorum, p. 132. Heidelb., 1620.

"Then, at length, the king having been summoned to see his son for the last time, (as being about to die,) brought with him Vesalius, whom the Spaniards had been wont to calumniate as one who, inasmuch as he busied himself only with the anatomy of the body, was unworthy to be called a real physician. He immediately gave it as his opinion, that in so desperate a case the only hope of cure lay in making an incision in the scalp. The king having given his consent, Vesalius opened the swelling by a crucial incision. A discharge of fetid matter began slowly to escape; the youth thereupon came to himself as if awaking from a deep sleep, and declared that he owed his restoration to life to the German physician."

Of all that precedes, the point most interesting to us on the present occasion is the important part ascribed to Vesalius in the treatment of the prince, and the resort said to have been made by him to the trephine, contrary to the decided opinion of the other professional attendants. Considering that had Vesalius treated the prince from the outset of the accident, had he retarded so long a resort to the operation, and had he pursued, under the circumstances mentioned in the above account, the course attributed to him, he would have been guilty of bad surgery, it is a source of gratification to find that the charge is far from resting on a sure foundation. Indeed, Hernandez Morejon, whose authority, from the access he enjoyed to the necessary documents, is entitled to the highest consideration, has no hesitation in denying, in his history of Spanish Medicine, the truth of the story.*

The following is the true account of the case according to this writer:—

The prince, as already seen, fell at Alcala, not from a horse, as was stated in an old MS., but in running down an obscure and dilapidated staircase, and, striking his head against a closed door, was picked up senseless. The first dressings were applied by Daza. Subsequently, the prince was treated by Portuguez, who, like Daza, enjoyed a high reputation for his surgical abilities, and nine professors, physicians, and surgeons, were in succession called in consultation. The first day, Daza, Vega, and Olivares saw the patient; the second, Gutierrez de Santander, Portuguez, and Pedro Torres attended. After the removal of the dressings, Mina and Vesalius were called in, and finally, twenty days after the accident, the services of the Bachelor Gorres were required.

Vesalius did not see the patient till the eleventh day after the accident.

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* Historia Filosofico—Critico de la Medicina espagnola, vol. iii. Madrid.

He expressed the opinion that his highness should be trephined, on the ground that the disease was internal. This advice *was not followed;* and none of the operations which were required during the three months that the disease lasted, (cupping, bleeding, dressings,) were performed by Vesalius. If this illustrious, rare, and profoundly learned man (Este doctissimo, insegne, y raro varon, as his colleague Daza denominates him,) had treated the prince, would no one have been found to write the history of a cure which was calculated to do him so much honor?

The prince himself directed Daza to draw up the account of the case. He was the first summoned, and to him, had it been necessary to use the trephine, Vesalius would have yielded the instrument; for although as an anatomist the latter had great dexterity in dissecting, he was slow and irresolute when he attempted to operate on the living body; and during the time he served as a surgeon in the armies of Charles V., whether in Germany or elsewhere, he almost always intrusted another surgeon, Castillan, with this duty.

Morejon adds, that so far from enhancing the reputation of Vesalius, the disease of the prince was more calculated to mortify him and wound his feelings; not only because his advice was not followed, or his prognosis verified, but because he suffered, in conjunction with his colleagues, from the effect of a tendency frequently encountered by physicians, not only among the vulgar, but also in the palaces of the rich or of kings. Through the interference of some influential persons the plaster of a Moorish empiric, from the kingdom of Valencia, who at that time happened to be at Saragossa, was resorted to. This individual, named Pintaret, was ordered to Alcala on the twenty-first day after the accident, and allowed to apply, himself, his ointment; and if, fortunately for the Spanish surgeons, the condition of the young prince had not become aggravated after the application, they would have been discharged, and Vesalius, together with his colleagues, would, in all probability, have witnessed the installation at court of the empiric Pintaret.

We cannot close the subject without alluding to the fact that, in the account of the case given by Mr. Prescott from Olivares, mention is made of a morbid state not referred to by Morejon, who, as we have seen, follows Daza—we refer to erysipelas. And yet Daza, being the attending surgeon on the occasion, could not have helped, had that disease occurred, to notice it, and it was too important a fact not to have been mentioned in a narrative of the case. Again, while it follows from the statement of Morejon, always on the authority of Daza, that the patient was not trephined, Olivares, as reported by Mr. Prescott, says he was. But whether such was the case or not, Vesalius does not appear to have been the operator; for Olivares does not mention him—a neglect of which he would scarcely have been guilty, considering the celebrity of that individual. We cannot, indeed, believe that Vesalius would have rendered himself amenable to the charge of such bad surgery, as to trephine a patient laboring under a condition of the scalp such as the one described.

Where Melchior Adams obtained all the information which more than half a century after the accident enabled him to write the above account, he does not say. Therein we find that Vesalius was the operator, but instead of being told that he trephined the patient, we only hear of his incising the scalp and letting out a quantity of fetid pus. Would any quantity of such matter, accumulated in or under the scalp, produce an apoplectic state? and could a person in such a condition experience, from an incision by which the matter was allowed to escape, the sudden relief attributed to the operation?

In regard to the third statement circulated relative to Vesalius—the autopsy by him of an individual still alive, his condemnation to death by the civil tribunals and by the Inquisition, on the charge of homicide and impiety, the commutation of the penalty to an expiatory pilgrimage to the Holy Land, and the fact that the prosecution was instituted at the instigation of Spanish physicians envious of the high position he enjoyed, much has been said. Dr. Burggraeve properly remarks, that before admitting statements calculated, if true, to injure the reputation of Vesalius, or to throw, if false, odium on the character of the Spanish physicians, it becomes a duty to examine how far they are founded, and whether the facts on which they rest are entitled to respectful consideration. Now if acting in accordance with this rule we investigate the statement in question with the care it so richly deserves from the high professional position of the accused, and the gravity of the charge brought against him, we shall not be long in arriving at a conclusion somewhat different from that adopted by the generality of medical readers.

We must premise that the story appears to have originated with, or at any rate cannot be traced beyond Hubert Languet, a controversial political writer of the time, of whom De Thou speaks in high terms, and who was, at the date of his writing, not in Spain—the scene of the supposed event, and where, indeed, he never went—but in Paris.

The information was conveyed by that writer, in a letter dated January, 1565, to his correspondent Gaspard Peucer, the learned physician and mathematician, and thence, after having been circulated freely, found its way in Melchior Adams's "History of the Lives of German Physicians," already mentioned.* "It is said," to use the words of Languet, "that Vesalius is dead. You have doubtless heard that he had undertaken a journey to Jerusalem. I learn from Spain the cause of his journey, which is really surprising," etc., (then follows the story of the dissection, etc.)* On the testimony of this communication, the statement was related by De Thou† and various other writers, and, what was of greater importance as regards its fate, adopted by Boerhaave and Albinus, in their life of Vesalius prefixed to their beautiful edition of his collected works, and through them accredited, from that time to this, by scientific men, biographers, historians, reviewers, and others, who, referring to the above authorities, or more generally copying each other, represent the occurrence as one placed beyond the possibility of doubt.‡

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* Vitæ Germanorum Medicorum. Heidelberg, 1620, p. 133.

The greater number of these writers adopt the story in all its details. Others, as for example, Richerand and Pettigrew,§ while doubting the truth of the individual subjected to the autopsy being alive at the time, seem to admit the reality of the story so far as regards the operation and the subsequent condemnation; and endeavor to explain how the belief in the continuation of life, on which the condemnation was based, could have occurred. We may suppose, according to the first of these writers, that one of the assistants, by leaning on the body, caused the blood to flow to the auricles, whence resulted an obscure tremulousness or undulatory movement, and that this mechanical effect being mistaken for a sign of life, caused a cry of alarm among the spectators, which was repeated by the enemies of Vesalius who were but too happy to seize so good an opportunity to do him injury. On the other hand, Pettigrew refers to the possibility that the muscular fibres of the heart acting by their principle of irritability—a principle unknown in the time of Vesalius—remaining even after vitality had quitted the body, may have tended to sanction the statement made.

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* Fama est, Vesalium esse mortuum. Audivistis procul dubio, eumprofectum esse Hierosolymam. Causa istius peregrinationis est mirabilis; ut ad nos ex Hispania est perscriptum. Commissus fuit curæ ejus quidam vir nobilis in Hispania; quem eùm obiisse existimaret; nec satis percepisse causam morbi sibi videretur; petiit à propinquis defuncti, ut sibi liceret cadaver dissecare. Concessum est ei, quod petebat; cumque pectus opertuisset: reperit cor adhuc palpitans. Cognati mortui non contenti eum accusare factæ cædis; accusant ætiam impietatis apud Inquisitionem; existimantes, se ibi severiorem ultionem consecuturos. Cùm constaret de cæde; nec facile excusaretur error tamperiti medici: voluit omnino Inquisitio de eo sumere supplicium: vixque potuit rex suâ autoritate, vel potiùs suis precibus eum periculo tanto eripere. Tandem concessus est regi et toti aulæ, pro eo deprecanti, eâ conditione: ut ad expiandum illud scelus proficisceretur Hierosolymam: et ad Montem Sinai.

Datæ Latetia Jan., 1565. Hæc Languetus.

† See the above work; see also Iac. Aug. Thuane Historiarum Sui Temporis, vol. ii. lib. 36, p. 398, French trans.; vol. iii. p. 492, note.

‡ Melchoir Adams, op. cit. Moréri, Le Grand Dict. Hist., x. p. 560. Biographie Médicale. vii. p. 420. Bayle et Thillaye, Biogr. Médicale par ordre Chronologique, i. p. 231. Encyclopédie Méthodique, xiii. p. 429. Encycl. Britan., xxi. p. 611, 7th ed. S. H. Dickson's Essays on Life, Sleep, Pain, and Death. Phila. 1852. Frazer's Mag , Nov. 1853. p. 500. Professional Anecdotes, iii. p. 225.

§ Michaud, Biographie Universelle, xlviii. p. 308, Art. Vésale; Medical Portrait Gallery, ii.

Another set of writers who have investigated the question with care, or who were placed in a position enabling them to arrive at just conclusions on the subject, have either doubted the truth of the statement, or denied it from beginning to end.

We have no hesitation in ranging ourselves under the banners of the latter set, and in avowing the belief that the whole story—dissection, trial, condemnation, and all—is destitute of foundation. In the first place, it must be remarked that Languet, who, as we have seen, resided hundreds of miles from the scene of the pretended occurrence, reports it not as one of the truth of which he was certain, but as being communicated to him by some correspondent he does not name, and for whose veracity he does not vouch. It has, therefore, the appearance of a mere *on dit;* and we cannot but think it were a hard case if the professional reputation of a man so eminent as Vesalius could be blasted, and be handed down to posterity obscured by a stigma of the kind, on the strength of a report picked up about the streets of Madrid by a gossiping correspondent, and communicated in a letter to a distant friend. Sprengel, while speaking of Vesalius in his great history of medicine, so far from expressing a belief in the truth of the story, remarks that the reason which induced the great anatomist to undertake a visit to Jerusalem is diversely stated; and adds, that at the present day it is impossible to decide which of those opinions approximates most to the truth.* Lampillas, whose testimony, from the circumstance of his being unconnected with the medical profession, and besides that a Spaniard, cannot, in a case of this kind, be impugned, says nothing of the pretended autopsy, trial, and condemnation, and, like many others, attributes the departure of Vesalius for Jerusalem to a desire, on his part, of fulfilling a vow.† Dutith de Horakoweiz, as quoted by Sprengel, (vol. iv. p. 6, note,) expresses a similar opinion.‡ De Thou says much the same thing.

Morejon, in his history of medicine in Spain, goes much further, and denies the story in most positive terms, on grounds which we think are entitled to the utmost consideration.

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* Histoire de la Médecine, iv. pp. 5, 6.

† Saggio Storico Apologetico della littérature Spagneola, etc., ii. p. 247.

‡ Craton. Epist., lib. iii. p. 212. § Op. cit., iii. p. 492.

> "Those," he says, "who invented it, did not think of proving it. What was the name of the individual whom Vesalius dissected before life was extinct? Who were the witnesses that proved the fact before the Inquisition? By which of the tribunals then existing in Spain was the case tried? How does it happen that Don Antonio Lorente, who, as already seen, refers to Vesalius, makes no mention of the trial in question in his annals or critical history of the Inquisition? How comes it that writers of the time of the death of Vesalius, and some, indeed, who were his colleagues at the Spanish Court, are silent respecting an event which, if true, would doubtless have fixed their attention, and of which they would have spoken; some to pity him, others to cast blame upon him, and all to entreat the clemency of the tribunal or of the monarch? Why? Because the fact is absolutely false."

To this Morejon adds, that, so far from Vesalius having been the subject of envy on the part of Spanish physicians and by them persecuted, the professors of that country sang his praise in the loudest tones, and chronicled his profound learning and his dexterity in anatomy. The unanswerable proofs of this are to be found in the writings of Valverde, of Pedro Ximeno, of Collado, of Daza, and of a large number of others, among whom may be cited Alphonzo Rodriguez de Goevara, Professor of Anatomy at Valladolid, and subsequently physician of the Queen of Portugal, Dona Catherina, who, while defending Galen, praises the anatomical knowledge of Vesalius.

It is a circumstance worthy of being noted, that the accounts given of this pretended event differ so materially from each other as to destroy the reliability to which they might otherwise be entitled. According to one version, Vesalius attended professionally a Spaniard of high rank for a disease, the nature and seat of which he had not been able to ascertain. At the death of the patient, he sought and obtained permission to make the autopsy of the body; but as soon as the heart was exposed it was found to beat and palpitate. Ambrose Paré, writing in 1562, that is, at the very time when the event is supposed to have occurred, has a different story on the subject, as may be seen in his chapter on the *suffocation of the womb*. After describing this disease, and the apparent death to which it may give rise, Paré adds:—

> "Partant en cette disposition ne faut se haster les ensevelir, et moins ouvrir leur corps, de peur d'encourir une calomnie, ainsi que de ce siècle est arrivé à un grand anatomiste. Ie dis grand et célèbre, de qui les livres réparent aujourd'hui les études des hommes doctes; lequel étant pour lors résidant en Espagne, fut mandé pour ouvrir une femme de maison qu'on estimait être morte d'une suffocation de matrice. Le deuxième coup de razoir qu'il lui donna, commença la dite femme à se mouvoir et à démontrer par d'autres signes qu'elle vivait encore. Je laisse à penser au lecteur comme ce bon seigneur faisant cette œuvre, fut en perplexité et comme on cria *Tolle* après lui. Tellement que

tout ce qu'il put faire, fut de s'absentor du pays, car ceux qui le devaient excuser étaient ceux couraient sus. Et estant exilé, tost après mourut de déplaisir; c'est ce-qui n'a pas été sans une grande perte pour la république."*

In noticing the discrepancy presented by these two versions of the same story, Burggraeve inquires how far it is probable that a man so profoundly learned as Vesalius would have ventured to open a human body so soon after the cessation of the phenomena of existence as to justify the presumption that life was not yet extinct. How, especially, can we admit the truth of the first version, when, as Richerand well observes, we consider that before the heart could have been exposed or even reached, it was necessary to have recourse to long and deep incisions, well calculated to recall life if still existing? In the second case, the supposed victim must have labored under an attack of epileptiform hysteria, with loss of consciousness, for the suffocation of the womb of Paré was no more than this. But Vesalius was too well aware of the precautions necessary to be taken, under circumstances of the kind, to open the body of a person laboring under the disease, during the continuance of the paroxysm.

Add to this that Ch. Delécluse, (Clusius,) the celebrated botanist, having arrived at Madrid at the very time when Vesalius left that city on his way to the Holy Land, must assuredly have been able to learn the true cause of his departure. And yet, on receiving the volume of the history of De Thou, in which mention is made of the death of Vesalius, he hastened to write to this historian for the purpose of pointing out some errors which the writer had committed relative to the cause of that event. His communication, which appears to have induced De Thou to modify his opinion on the subject, was inserted as a note in the subsequent editions. He informs De Thou that, remaining in Spain against his will, Vesalius fell into a state of melancholy, and finally became seriously ill of a disease from which he recovered with great difficulty. In consequence, he pressed the king for permission to leave Spain, in order to be able to fulfill a vow he had made during his illness, to undertake a pilgrimage to the Holy Land. "I have learned these details," says Delécluse, "from Ch. Tisenau, chief of the council of the Low Countries, at Madrid."†

But enough, we think, has been said on this subject to justify the opinion we have expressed.

It remains only to remark that besides the works already mentioned, Vesalius was the author of several of more or less importance and of greater or less size. Indeed, when we consider the amount of his labors as a writer, and bear in mind the circumstances under which most of that labor was performed, and the short space of time—less than thirty years—during which the whole was effected, we can have no hesitation in admitting that few men have exhibited so great a degree of mental activity. Without entering into details relative to the collation of the Greek text of Galen, which he undertook for the great Venetian printer Junta, or to the paraphrase of the work of Rhazes, already mentioned, in which the knowledge of the Arabians is compared with that of the Greeks and other writers,* and which was prepared for his inaugural dissertation, we may state that Vesalius published a new edition of the "Institutions" of his old master, Gonthier d'Andernach, which he revised and corrected with the greatest care, and at the cost of much time and labor. In 1539 appeared a letter on the necessity of bleeding in the treatment of pleurisy.† The next year he issued at Venice his first anatomical plates, engraved on wood. They were intended as a kind of specimen of the fine plates which were to illustrate his large work on anatomy. From 1540 to 1564 Vesalius composed a large number of written consultations on a variety of medical and surgical diseases, which may be found in the works of Ingrassias, Montanus Scholtzius, etc.

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* Œuvres de Ambroise Paré, liv. xxiv. chap. liv. p. 627; Paris, 1685. Malgaigne, ed. 2, p. 755.

† De Thou, Histoire Universelle, vol. iii. p. 491, 2d note.

His great work on surgery, though completed as early as 1561, did not appear till some time after his death. We are informed that by a concourse of fortuitous circumstances the manuscript of this work found its way, after this event, into the hands of a bookseller in Paris. By him it was sold to a physician named Bergarutius, who edited it and published it at his expense.‡ M. Burggraeve remarks that this physician has been taxed with having been influenced in this transaction by motives of pecuniary interest. By some, indeed, the work has been regarded as a mere fraudulent operation. But there is no more reason to doubt its authenticity, than that of the other writings of the same author.

A collected edition of the works of Vesalius was published in 1725 by Boerhaave and Albinus, with an introduction and life of the author by the celebrated editors.§

Thanks to the impulse imparted by Vesalius to the investigation of anatomical subjects and the death-blow he had given to the authority of Galen so far as regards this branch of knowledge, there sprang up about the time of or not long after his death a whole generation of anatomists, who by their labors shed an imperishable lustre on the closing years of the sixteenth century. The result was particularly apparent in Italy—in the very spot that had so long echoed with the sounds of applause he had received from his admiring pupils. There indeed anatomy had become an object of worship, and there was formed that admirable school of which he was the chief; and the almost entire number of whose members attained the highest renown—Fallopius, Colombus, Varolius, Aranzi Canani, Vander Spiegel. Vesalius may be said, with apparent justice, to have been not only the creator of normal anatomy, but also to have given a strong impulse to pathological anatomy. In his splendid work on anatomy may be found a large number of pathological facts, which it was his intention to have collected in a separate treatise. The task was reserved for Colombus, who inserted the most important of these facts in his volume *De re anatomica.*

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* Paraphrasis in nonum librum Rhazæ ad Almamsorem de affectum singularium corporis partium curacione. Bazil, 1537.

† Epistola docens Venam anxilarem dextri cubiti in dolore laterali secundam, etc. Basilæ, 1539. 4to.

‡ Andreæ Vesalii Chirurgia Magna in qua, nihil desiderari protest, quod ad perfectum, etc. 8vo. 1560.

§ Andreæ Vesalii Opera Omnia Anat. et Chirurg. Cura Herm. Boerhaave et Bern. Sieg. Albini. Lugd. Batav., 1725. 2 vols. fol.

To the same distinguished individual physiology, which received an impulse in the seventeenth century similar to that which anatomy had experienced in the sixteenth, is greatly indebted. Two memorable discoveries date from that period—those of the circulation of the blood and of the lymphatic vessels. M. Burggraeve remarks that if Vesalius remained a stranger to the latter, he may be said to have paved the way to the former by preparing all the elements of the important problem which it was reserved for Harvey to solve.

"Thus if it be true that the knowledge of the circulation of the blood is founded entirely on that of the organs which effect it, who more justly than Vesalius can aspire to the honor of having pointed out those circumstances? He it was who by determining in a precise manner the disposition of the heart, and by describing the admirable mechanism of its valves, indicated to the English physiologist the course he was to pursue in order to affix his name to one of the most important discoveries of modern times. The question was ripe, and Harvey is simply entitled to credit for having seized the *apropos*, inasmuch as it was only necessary for him to draw the natural conclusions flowing from the facts established by the Belgian anatomist.

"Among the authors who illustrated the seventeenth century, Malpighi, Bellini, Lower, Glisson, Santorini, Senac, Duverney, Ruysch, De Graeve, and many others it were too long to enumerate, stand pre-eminent. But even here it will not be difficult to show that Vesalius may be regarded as having guided them in their researches. If all these anatomists became specialists, it is because, finding the field of the science already entirely explored, they were compelled to limit themselves to the cultivation of a small portion of it, in order to be able to make new acquisitions. And even these few cannot be referred to them without some reserve. Thus the germs of the researches of Malpighi on the brain, the liver, and the spleen ; of Willis on neurology; of Senac, Lower, and Winslow on the heart, are to be found in the anatomy of Vesalius."

M. Burggraeve thinks, further, that Vesalius anticipated the views which two hundred years after his time inspired Bordeu and Bichat with the idea of the general anatomy.

The same author is of opinion that in regard to the investigations on comparative anatomy which have assumed so great an extension in the nineteenth century, Vesalius is entitled to a large share of the credit accruing therefrom. It is true, he dispossessed the anatomy of the lower animals of the part which Galen had made it play in the science of the anatomy of man. But, compelled as he was to combat and to exhibit at each step the inaccuracies of that great man, Vesalius was under the necessity of constantly comparing the human body with that of the lower animals, in order to be able to point out the differences existing between them. In other words, in demonstrating in what respect organizations differ from, and in what they resemble, each other, he indicated to the Vicq D'Azyrs, the Daubentons, the Cuviers, the Dumerils, the Blainvilles, the Geoffroy St. Hilaires, the Meckels, the Tiedemanns, the Mullers, the Caruses; in a word, to all those anatomists who in our days trace the analogies of living beings amid the infinite variations they present, the route they were to follow.

On this point the work of Vesalius is admirable. M. Burggraeve tells us that he read it through, Cuvier and Meckel in hand, and did not find him in a single instance guilty of an erroneous statement, or of a faulty application.

We thus perceive that Vesalius may, to a certain extent, be said to have gone through the entire circle of anatomical researches. But it is evident, from all that precedes, that his claims to the undying remembrance of posterity rest almost exclusively on the result of his achievements in the science of normal human anatomy, and on the fact that he was the first to overthrow the ancient prejudices and the blind confidence reposed on the authority of Galen, by exposing boldly and satisfactorily his many anatomical errors. It will not comport with the limits of this essay to enter into anything like a critical review of all the services Vesalius has rendered the science of anatomy. Sufficient is it to remark, that in the department in question his large work constitutes a monument whose fame is not destined to perish for many a long day. It is unlike most other works of science which, as a general rule, have only an importance relative to the period at which they appear. Such, we are reminded by M. Burggraeve, is the march of the human intellect. In proportion as facts are discovered, ideas are modified, and a work which may have been considered of value and complete at the time it was published, ceases, when judged in accordance with the condition of our knowledge on the subject it treats of, to be held otherwise than as a kind of historical document, useful for indicating the difference which exists between the science of that day and the science of our own. This truth is, perhaps, more applicable to works of anatomy than to those relating to any other branch of human knowledge, inasmuch as none have made greater progress or experienced such complete revolutions. In our days no one consults the works of Mundinus, of Zerli, or of Achilini, unless it be as objects of history, and as curious monuments of the infancy of the science. At the side of such works there are others, few it is true, which resist the uninterrupted progressive march of centuries, and preserve eternally an air of freshness and youth—so greatly do they appear to be, as far as regards ideas and facts, contemporaneous with the period at which they are consulted. Such is, and will always be the case with the great work of Vesalius. The long period of three centuries which has passed by since it first appeared has deprived it of none of its actuality, and even at this day it may be considered as the most important monument raised to the science of the organization of man.

Vesalius described in it almost all parts of the body, and only transmitted to his successors the task of correcting a few inaccuracies left in the text and plates from sheer oversight, and not out of regard for Galen; and of adding to it, now and then, a few details which are required to complete the ensemble of the system. To expect entire completeness and perfection in a work of the kind, composed under circumstances such as those that existed at the time, would be folly. Impressed with the belief that the study of an organ cannot be separated from that of its functions, Vesalius was the first to make a satisfactory combination of anatomy and physiology. Speaking of his work he says:—

"I have endeavored to make it a complete treatise of the organization of the human body, and have divided it into seven books.

"In the *first* I describe the nature of the bones and cartilages, as being the parts which anatomists should know first, since it is on them that all the other parts that remain to be known rest and move.

"In the *second* I treat of the parts by means of which the bones and cartilages are joined together; and afterwards of the muscles, organs, of the movements they execute by command of the will.

"The *third* comprehends the veins which carry the blood to all the organs, and the arteries which are charged with the distribution of the vital spirits.

"The *fourth* teaches not only the nerves which carry the animal spirits to the muscles, but also the order in which they originate and are distributed to the organs.

"The *fifth* explains the structure of the organs of nutrition, and, owing to their mutual relations, those of the reproduction of the human race, such as the Creator of all things has established them.

"The *sixth* is appropriated to the heart, source of the vital spirits, and also to the different parts which enter into the structure of that organ.

"Finally, in the *seventh* I have treated of the general harmony of the brain and of the senses, in order that what I have said of the nerves arising from the brain may not be repeated."

As may be perceived, this arrangement does not differ essentially from that adopted in most of the modern works on anatomy. It is similar to those of Bichat, Cloquet, Cruveilhier, and others. According to M. Burggraeve, it is the only natural one, since it enables the writer to describe the parts of the body in accordance with the functions they execute. Nevertheless, Vesalius was fully aware of the necessity of adding to the physiologico-anatomical survey of the body a demonstration of the relations existing between the parts described, and of the order in which the latter present themselves under the scalpel of the anatomist. With the view to attain this object, he devotes, after describing each organ, a chapter to a careful enumeration of those different circumstances. The study of each system of organs is preceded by that of the tissues which enter into their composition; in other words, by what we now denominate their *general anatomy.* Nay more; not content with studying the parts in their normal or physiological conditions, Vesalius examines them as closely as possible in their morbid state, and endeavors to illustrate the facts of normal anatomy by those of pathological anatomy.

Vesalius may be viewed with justice as the creator of anatomical Iconography; for though essays had been made in that department before his time, with the view to supply, by means of drawings, the want of dead bodies, those that had appeared were for the most part coarse, and partook of the infancy of the art. The plates which Vesalius caused to be engraved were like his book itself. They were at least a whole century in advance of their time; for, as M. Burggraeve states, we must reach Ruysch and Albinus before we can find drawings executed with so much vigor and fidelity.

"Those especially which relate to osteology and myology are real masterpieces. They were copied during more than a century by every author who published works on anatomy; and even now, it may be averred that art has produced nothing more perfect."

Of his talent as a practical surgeon or physician, as also of his private character and social virtues, we know but little. That he possessed no great skill as an operator we have already seen there is reason to believe. On the other hand, his work on surgery would seem to attest his proficiency in the other branches of that department. We find in De Thou the account of a case which, if true, shows conclusively that in matters of prognosis he was no child. We give it in De Thou's words.

"Having apprised Maximilian Egmont, Count of Bure, of the day and hour of his death, this nobleman ordered a superb feast to be prepared, and the tables to be covered with all his silver and golden ware. He invited his friends; sat near them; pressed them to make good cheer; distributed liberally among them his treasures. This done, he took leave of them without the least manifestation of emotion; retired to his bed, and expired at the very time Vesalius had predicted."*

Vesalius was married, on his return to Brussels from Italy, to a lady of the name of Clara Van Hanom. But the course of their matrimonial life does not appear to have flowed smoothly—whether through his fault or hers is not positively known—though if the statement of Swartius can be relied upon, the blame must rest upon the lady; for that author attributes the departure of Vesalius from Spain to a desire of escaping from the vexations continually experienced from her ill temper. They left that country together, but parted shortly after; and while he pursued his journey to the Holy Land she proceeded to Brussels, where, shortly after his death, she remarried. Of that marriage the only issue was a daughter, Ann, who married John Moll, the Grand Falconer of the King of Spain.

Delécluse, to whom reference has already been made, lets us into the secret of one of the defects in the character of Vesalius. He represents him, on the authority of Tisenau, as being extremely avaricious.

> "But it was his avariciousness that was the cause of his death, as I learned at Madrid, in the month of April, 1565, on my return from Portugal, Andalusia, and the kingdoms of Granada and Valencia. After having fulfilled his vow, Vesalius had embarked to cross again to Europe, which he thought he would soon reach. He did not provide himself with a sufficient quantity of provisions, and, as the passage turned out to be longer than had been expected, they failed him. But one of his fellow-passengers, a German gentleman, having discovered the circumstance, supplied him liberally with means of subsistence. His strength, however, had already been so greatly reduced that he died shortly after reaching the Island of Zanthe."†

When we consider that all that was effected by Vesalius occurred three full centuries ago; that nothing equal to it in any respect had been before seen; that Vesalius succeeded in producing, at a period of life when, with few rare exceptions, men are occupied in acquiring knowledge, a complete work upon the entire anatomy of the human body, derived from actual observations and dissections; when, let it be remembered, such investigations were held to be unlawful; that while scattering to the winds in the face of the most violent opposition an anatomical system which had reigned supreme during some fourteen hundred years, he erected one which, with some modifications that time alone did not permit him to effect, remains untouched to this day, we may be pardoned for regarding him as occupying one of the highest positions in the medical hierarchy, and as being fully entitled to the time and space we have devoted to an account of the principal events of his life and of his scientific achievements, as also to a vindication of his professional character from imputations of a serious kind.

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* Historia, etc. vol. i. lib. iv., p. 196. London, 1733.

† De Thou, iii. pp. 491, 492. Fr. trans.

Portal can scarcely be taxed with an unpardonable degree of exaggeration when, lost in admiration of the genius of our author, he exclaims:—

> "Vesale me paroît un des plus grands hommes qui ait existé. Que les Astronomes me vantent Copernic; les Physiciens, Galilée, Toricelli, etc.; les Mathématiciens, Pascal; les Géographes, Christophe Colomb. Je metterai toujours Vésale au-dessus de leurs héros La première étude pour l'homme, c'est l'homme. Vésale a eu ce noble objet et l'a rempli dignement; il a fait sur lui même et dans les corps de tous ses semblables, des déconvertes que Colomb n'a pu faire qu'en se transportant a l'extrémité de l'univers. Les déconvertes de Vésale touchent directement l'homme; en acquerant de nouvelles connoissances sur sa structure, l'homme agrandit, pour ainsi dire, son existence, au lieu que les déconvertes de Géographie, d'Astronomie ne touchent l'homme que d'une manière très indirecte. La maison de Vésale sert aujourd'hui de Convent aux Capucins de Bruxelles. Ces Religieux se font encore un honneur de dater leurs lettres *ex ædibus Vésalianis.* Ou trouve des gens de goût dans tous les état."*

ART. II.—*The Management of Infancy, Physiological and Moral. Intended chiefly for the Use of Parents.* By ANDREW COMBE, M.D., Fellow of the Royal College of Physicians in Edinburgh, and one of the Physicians in Ordinary to the Queen. Ninth Edition. Revised and Edited by SIR JAMES CLARK, Bart., M.D., F.R.S., Physician in Ordinary to the Queen and His Royal Highness the Prince Consort. Edinburgh: Maclachlan & Stewart, 1859. pp. 302. 12mo.

FEW writers have been so successful in disseminating a knowledge of practical or applied hygiene as Dr. Combe has been in the successive works which he issued on this fruitful theme; beginning with the one entitled "*The Principles of Physiology applied to the Preservation of Health, and to the Improvement of Physical and Mental Education,*"† and ending with that now before us, which made its first appearance in 1840. In the intermediate period, in the year 1836, he sent out "*The Physiology of Digestion, considered with reference to the Principles of Dietetics.*" He also edited the work of Dr. Beaumont on the *Gastric Juice.*‡ The first work written by Dr. Combe was entitled "*Observa-*

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* Hist. de l'Anat. et de la Chirurg., tome i. p. 399.

† First published in 1834.

‡ Experiments and Observations on the Gastric Juice and Physiology of Digestion.

tions on Mental Derangement," based on the principles of physiology—1831. It was favorably spoken of by Dr. Abercrombie. His extreme conscientiousness prevented him from bringing out a second edition, as his other avocations and infirm health would not allow of his giving that attention to the treatment of insanity and the progressively increasing knowledge of the entire subject, which its importance demanded.

The first edition of the Management of Infancy, etc., was dedicated to Sir James Clark, the Queen's physician, and now, in a spirit of the kindest regard and admiration of the author, Sir James, has "revised and edited" this, the ninth and last edition. In a well written and appropriate "Introduction," the editor, after assigning the motives which influenced him on the occasion, says: "The work has been to me a labor of love, and it has not been a heavy one, as the last edition, which the author himself corrected, was left so perfect that little remained for an editor to do." We cannot commend the freedom taken by Sir James in his having altered the order of some of the chapters, even though it has been done "with the view of bringing the subjects treated of more consecutively before the reader;" nor his having ventured to omit some portions, chiefly in the earlier chapters, as less necessary now than during the author's life. The most exacting reader would, it seems to us, have been quite content to receive, without alteration or curtailment by another hand, the matured opinions, as well as the language in which they were couched, of the author himself, after the opportunities which he enjoyed for accomplishing these objects in six successive editions of his work. By no critic can Dr. Combe be accused of redundancy and needless repetition, nor of obscurity in the general management of his subject, or want of method in its details. There is a decided inconvenience in the transposition of chapters and omissions of parts of the text by an editor, in its producing embarrassment and confusion when referring to and quoting from the work. There will be a want of correspondence between the original by the author himself, and the edition moulded to suit the taste of his friend and commentator. Thus, for instance, had a writer quoted a passage from the first chapter of the sixth edition of Dr. Combe's work, treating of the *mortality in infancy*, etc., the reader of a copy of the present edition, who had not seen a previous one, would accuse him of inaccuracy and wrong citation, and would correct him by saying that this is the subject of chapter third. Still more serious would be the confusion produced by one writer quoting a passage which another could not find in the volume; the former having made use of the author's edition, the latter having access only to the editor's, and *e cenverso*, the language of the latter may be erroneously cited as that of the former. We need not press the argument further, and would scarcely have thought it worth while to do more than to enter a brief protest in the present instance, were we not apprehensive that an example thus set by Sir James Clark, with the most amiable motives, might be followed by others on a larger scale, and under equivocal circumstances. Some of the additions made by the editor of the present work are incorporated in the text: they would more appropriately, for the reasons which we have assigned, find a place in the form of notes, or in the appendix actually made, and which consists of useful matter germain to the work.

We pass with pleasure from this brief criticism to more congenial themes—the decided and distinctive merits of the labors of Dr. Combe in the present volume, and the hearty and discriminative appreciation of them by Sir James Clark, in his "Introduction." Addressing himself more particularly to the different parties who would be greatly benefited by a careful perusal of the work, the editor says:—

> "My great aim has been to carry out what I know was the object of the author, namely, to make the work useful to young medical practitioners and teachers of youth, as well as parents, for whose guidance the work was mainly and originally designed. To my younger medical brethren, entering on the anxious and responsible duties of their profession, I earnestly recommend a careful study of the book—I know none on the subject of infant hygiene in which is to be found so much valuable practical information to guide young medical practitioners in the management of infants and young children. I venture to give the same advice, and with equal earnestness, to teachers, both male and female, and more especially to the teachers of infant schools."

The editor, in continuation, insists on the importance of a thorough understanding of the principles so lucidly explained by Dr. Combe, respecting the progressive development of the mental faculties, and the application of such knowledge by those who have the management of infant schools. He considers the same advice strictly applicable to governesses. "How important is it then that this class of teachers should possess such a knowledge of the physical and mental constitution of the young beings committed to their charge, as shall enable them to cultivate and train the moral feelings as well as to instruct the mind!" And, a few lines farther, he makes the following emphatic declaration: "In my opinion *no teachers of any class should be considered competent for their duties till they have given proof of possessing a general knowledge of the structure and functions of the human body and of the laws of health.*"

> "Within the last few years," as we learn from Sir James Clark, "physiology, in its application to health, has been taught with considerable success in several seminaries, more especially in the Birkbeck schools in London, under the enlightened direction, and by the liberal support of Mr. William Ellis, and it has been invariably found, even at a very early age, to excite in a remarkable

degree the interest and attention of the pupils. It is to be hoped, therefore, that the time is not far distant when physiology will form an essential part of the course of instruction in every school. It is in vain to expect that education can be rightly and successfully conducted until the *educators* themselves are instructed in the nature of the physical and mental constitution of those whom they undertake to train and instruct."

In a note the reader is referred to the Appendix E, for the opinion of sixty-five of the most eminent physicians and surgeons in London, including the professors of anatomy and physiology, strongly expressive of their belief of the benefits to be derived from making the elements of human physiology, or a general knowledge of the laws of health, a part of the education of youth. They "are convinced that such instruction may be rendered most interesting to the young, and may be communicated to them with the utmost facility and propriety in the ordinary schools, by properly instructed schoolmasters." Dr. Combe himself makes an earnest appeal, which the editor has transferred from the body of the work to his Introduction, urging the necessity of an acquaintance with physiology and the constitution of the infant frame being made an essential part of *female education.* We quote the concluding paragraph:—

"It may indeed be alleged, that mothers require no knowledge of the laws of the infant constitution, or of the principles of infant management, because *medical aid* is always at hand to correct their errors. According to the present habits of society, however, professional men are rarely consulted till the evil is done, and the health broken; but even if they were, intelligence and information are needed in the mother, to enable her to fulfill their instructions in a rational and beneficial spirit. On every account, therefore, it is urgently necessary that female education should be such as to fit both mind and body for the duties as well as for the embellishments of life, for the substantial happiness of the domestic circle, at least as much as for the light and fleeting hours of fashionable amusements; and that, while every effort is made to refine and elevate the mind, the solid substratum of useful knowledge should not be neglected."

Reference is made by the editor to "The Ladies' National Association for the Diffusion of Sanitary Knowledge," the principal object of which is the preservation of the health of children. "It is to women that we must look first and last," says Miss Nightingale, "for the application of sanitary knowledge, as far as household hygienè is concerned." Sir James Clark offers a very pertinent suggestion "for the consideration of those ladies who have gone through a systematic course of medical education, with a view to qualify themselves as medical practitioners, as to whether devoting their time to the instruction of their own sex in the laws of health would not form an equally useful and a more appropriate profession than that of a physician or surgeon?" The suggestion is well timed, and if adopted, would place the female teachers of their own sex on a higher ground and in a more advantageous position than can be occupied by any of their number as practitioners of medicine.

Hygiene, as justly remarked by the editor, has not received the attention which it merits as a branch of medical education. "The University of London is," he believes, "the only one in the country in which hygiene finds a place among the prescribed subjects of examination for degrees in medicine—a regulation mainly owing to Dr. Combe's earnest recommendation."

> "In the Army Medical School just instituted, *hygiene* will form the most important branch of the young medical officer's instruction. For originating this school we have to thank Miss Nightingale, who, had her long and persevering efforts effected no other improvement in the army, would have conferred, by this alone, an inestimable boon upon the British soldier, and merited the gratitude of the country for the improved sanitary condition of the army, and the saving of human life, which will be the result."

Ought there not to be in all the military posts of the United States, not only riding schools for the cavalry soldier, but also gymnasia for soldiers of all arms, in which they might be trained to various exercises and feats of strength and agility, with the immediate effects of preserving health and furnishing amusement, and the more remote and contingent, but still very important ones of imparting to them more powers of endurance and greater efficiency in a campaign, and especially when detached to reconnoitre, or as skirmishers, and in a retreat?

We cannot refrain from one more quotation from the "Introduction;" the sentiments conveyed in it are coincident with those which we have repeatedly expressed on the subject:—

> "When the public is made fully aware of the extent to which health may be preserved and disease averted and mitigated by a knowledge of physiology, the practice of medicine will assume a very different aspect from that which it presents in its present unsettled state. The physician will then be more frequently consulted on the means of preserving and improving health than for the treatment of disease, as is almost solely the case at present."

We shall not offer any apology for introducing those preliminary matters before entering on a formal notice of the contents of the work of Dr. Combe. If we have kept our readers on the threshold, it was that they might enjoy the company and discourse of the editor, Sir James Clark, the friend of the author, while touching on kindred themes, and enhancing the relish for that which is to come. It will be remembered, also, that we have not to deal with a new work. "The Management of Infancy" has gone through successive editions in the United States. The first American followed, after a few months in the same year, (1840,) the first English edition. It received numerous notes and a supplementary chapter from Dr. Bell, who undertook this task in order to give Dr. Combe the pecuniary advantage which ensued from the publishers being able to take out a copyright on this side of the water.* The volume was first published from stereotype plates, by Messrs. Carey & Hart, of Philadelphia. These plates are now in the possession of Messrs. Fowler & Wells, of New York, who have published, at different intervals, several editions.

The themes severally discussed by Dr. Combe in this volume are of the highest importance to the well-being and usefulness of mankind. Though turning mainly on the physical and moral training of infancy, they have also an obvious bearing on adult life; much of the happiness of which will depend on the manner in which the first mentioned period has been passed. Following the order of succession of the different chapters as they present themselves in the present edition, we meet, in chapter first, with the views of the author on the "Influence of the Constitution of Parents on the Health of their Children." The subject does not come within the domain of love and sentiment, and is seldom thought of in forming matrimonial engagements, although it is not long before the discovery is made, that young romance cannot remain in its dream-land when the objects of first admiration become the victims of bodily infirmities and decay, with their too frequent concomitants of caprice, peevishness, and vagaries of fancy in which ill-timed suspicion performs an important part. Dr. Combe contrasts "some families apparently surrounded by every external advantage, yet in which it is found difficult to rear the children to maturity," with other families seemingly much less fortunate in their outward circumstances, but in which one child grows up after another, as if no such thing as disease existed, or as if the ordinary disorders of infancy were but mysterious processes for the further development of the organism." The difference in these cases is dependent on some inherent difference of constitution derived from one or both parents, which is commonly spoken of under the title of hereditary influence.

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* That this voluntary service was appreciated by Dr. Combe in the spirit in which it was offered, is evident from the following lines in the Preface to the sixth and the last edition which he ever supervised: they carry with them the more interest as they were written within two months of his death, which took place August 9th, 1847:—

"Here I cannot resist the opportunity of expressing my grateful acknowledgments to Dr. John Bell, of Philadelphia, for the time and trouble which, amid many pressing avocations, he so kindly and disinterestedly bestowed, not only in superintending the republication of this work in the United States, but in enriching it with many valuable notes, for the purpose of adapting it more completely to the domestic habits and wants of the Transatlantic public."

The conditions in the parents which affect most powerfully the health of the child are thus stated:—

"*Natural infirmities of constitution, bodily and mental, derived from their parents.*

"*Premature marriages, especially of delicate persons, and of those strongly predisposed to hereditary disease.*

"*Marriages between persons too nearly allied by blood, particularly when either of them is descended from an unhealthy race.*

"*Marriages contracted too late in life.*

"*Great disproportion in age between the parents.*

"*The state of the parents at the time of procreation.*

"*The state of health, and conduct, of the mother during pregnancy.*"

On the subject of "hereditary predisposition," the author adverts to the influence of descent, manifested even in the vegetable as it is in the animal world:—

> "Quite as much importance is attached to the quality of the seed as to a good soil and good cultivation; and in like manner in rearing the lower animals, especially the horse, purity of race is prized above all other conditions; and so entire is the dependence placed upon the hereditary transmission of qualities, that the genealogy of the race-horse, of the hunter, and even of the farm-horse, is regarded as a sure criterion of the properties which may be expected in their progeny. In the dog, the sheep, and the different varieties of cattle, we calculate with certainty on the reappearance of the qualities of the parents in their young."

Man himself constitutes no exception to the general law. "In relation to this subject the great Haller mentions a very remarkable instance of two noble ladies who were married on account of their wealth, although they were nearly idiots; and from whom the mental defect extended for a century into several families, so that some of all their descendents continued idiots into the fourth, and even to the fifth generation." Examples without number might be cited to the same purport. The results of descent work both ways. "The very same law by which the liability to gout, insanity, imbecility, scrofula, and constitution is transmitted from generation to generation, enables us to reckon with equal certainty on the transmission of health and vigor wherever these have been the hereditary features of the race." The practical inference from these laws is obvious, the penalty for neglecting it is equally clear and certain in its exaction.

The evils from the "marriage of persons too nearly allied in consanguinity" have been exhibited on a large scale "in the deteriorated off spring of some of the royal and aristocratic families of Europe, in which frequent intermarriages have taken place without any regard being paid to the morbid predisposition on either side. Prejudices of race and religion, as in the instance of the Jews, have led to similar intermarriages, and under disastrous results. "The Jews in England," says Dr. Elliotson, "have the same bad practice of marrying first cousins; and I never saw so many instances of squinting, stammering, peculiarity of manners, imbecility, or insanity, in all their various degrees, intense nervousness, etc."

It is not long since that the public papers contained an account of the marriage ceremonies, the bridal trousseau, and magnificent feast, on the occasion of the union of two cousins, a daughter of the English Rothschild, and a son of the German one. How much it is to be regretted that the two fathers who have such an intimate knowledge and keen perception of the workings of the stock exchange, should not have acquired some elementary information on the results of the kind of dealing in family stock, in which they allowed themselves to be engaged on this occasion, with every probability of a terrible depreciation of marriage investment at an early day. The editor refers, in the Appendix, to the results of marriages of consanguinity in the United States, as stated by Dr. Bemis, of Kentucky, in the first volume of the *North American Medico-Chirurgical Review*, and by Dr. Devay, "Hygiene des Familles," in the *American Journal of Insanity*, 1859.

Taking it "as the general rule that women do not attain their full development before from twenty to twenty-three years of age, and men from twenty-five to thirty," a statement nearly applicable to this country as well as to Great Britain, we can easily conceive the detrimental effects of delicate girls marrying at seventeen, and sometimes even at fifteen, "before the mental or physical powers are fully developed, and at the manifest risk of entailing infirm health on themselves and their offspring, and thus throwing away the best chance of their own permanent happiness." "Late marriages are scarcely less unfavorable to the health of the offspring than those contracted in very early life."

The state of the parents at the time of procreation, the most frequent and the most injurious to the offspring, is *habitual indigestion* and its consequences, *impaired nutrition.* The objection often urged against the hereditary transmission of certain qualities of mind, that "clever men generally have stupid children," is met by the following, among other remarks, by Dr. Combe: "Not to dwell on the circumstance that men of genius frequently marry late, it is notorious that nothing can be farther removed from the standard of nature than their state of health and general mode of life. Are they not, as a class, enthusiastic, excitable, irregular in their habits, the sport of every passing emotion, and almost without exception, victims to indigestion and often to melancholy?"

"The Influence of the Mode of Living during Pregnancy on the Health of the Child," is the subject of chapter second. In it the author treats of mental emotions, longings, diet, dress, exercise, bathing. To contribute to the health, comfort, and cheerfulness of the mother during pregnancy, is the paramount duty of all who are brought in relation with her during this time, and at none other is a rational observance of the laws of health more necessary. Healthful, invigorating occupation, exercise of mind and body, the use of plain, nutritive food and air, and an avoidance of stimulants, ought to be especially enjoined. The pregnant female should "be on her guard against giving way to caprice of temper, to the temptations of indolence, to endless novel-reading, or to any form of social dissipation." If to these we add great cleanliness, moderate diet, pure air, early hours, clothing suitable to the season, and healthy activity of the skin, we shall have specified all the conditions to be complied with in this most interesting, if not the most trying period of woman's matrimonial life.

The "Causes of Infant Mortality" are next examined with care, in the third chapter of the volume, and many of them shown to be removable, and to be increased by parental ignorance. We cannot follow the author in his statistical proofs of the several positions advanced, but copy his summing up as follows:—

"From these incontrovertible facts, corroborated by returns derived from other countries, [in addition to England,] the reader may conceive how many *elements* of destruction must still be in activity, even in those parts where science has made the greatest advances, and where the treatment of the young is considered the most rational, when *one in* every seven infants ushered into the world perishes within the first year, and one in every five within the first two years of existence!" The enormous mortality in children is under the first five years of their age. A strong, it may be called startling fact, confirmatory of there being preventible means against the great mortality among children of a tender age, is quoted by Dr. Combe. About a century ago, the workhouses of London presented the astounding result of *twenty-three deaths in every twenty-four* infants under the age of one year. Under an improved system of management, in consequence of a Parliamentary inquiry, the proportion of deaths was speedily reduced from 2600 to 450 a year! "There then was an annual loss, in a single institution, of 2150 lives, not attributable to any unalterable decree of Providence, as some are disposed to contend, as an excuse for their own negligence, but to the ignorance, indifference, or cruelty of man!" Another instructive example of the extent to which infant mortality may be diminished by rational treatment, is furnished by Dr. Joseph Clarke, from the Register of the Lying-in Hospital of Dublin. Struck with the extraordinary mortality, which at the conclusion of 1782 was nearly every sixth child, and which seemed to him to be owing to the impurity of the air, he procured better ventilation, and the proportion of deaths was speedily reduced to one in nineteen and a half. Mr. Simon, the medical officer of the Privy Council, quoted by Dr. Combe, very justly remarks, that the "*death-rates* of young children are among the most important studies in sanitary science, not only on their own account, but as affording a very sensitive test of the sanitary circumstances of the district." "A high local mortality of children almost necessarily denotes a high local prevalence of those causes which determine a degeneration of the race."

In chapter fourth, the author shows, with his customary force and clearness, that infant health is not accidental, but dependent upon fixed laws. For a better understanding of the subject by the reader, an intelligible account is given of the infant constitution, and of the chief conditions by which infant health is influenced, so that it may be practically useful in the hands of any parent of ordinary capacity. The author inculcates the fact, "that disease and untimely deaths are the result, not of chance or of any abstract necessity, but simply of the infringement of the *conditions* on which God has decided the healthy action of the organs of the body to depend, and which have, therefore, been appropriately named the *organic laws*." "The grand aim, therefore, in attempting to improve the treatment of infancy, ought to be the discovery and fulfillment of the conditions on which the healthy action of the principal organs and functions depends."

Carrying out the principles laid down, the author proceeds, in chapter fifth, to speak of the constitution of the infant at birth. To the general reader, a knowledge of this kind is highly necessary: to our professional brethren, it carries with it no novelty in the fact, although it is made more instructive from the manner it is presented. The still popular idea that infants have a great power of resisting external cold is combated and its fallacy exposed. There is hardly a more pernicious error in the management of infancy than this one, and its absurd sequences of hardening, as it is called, the little being by careless and cruel exposure of parts of its body to cold, which are, in fact, the most sensitive, and require the largest measure of protection against this debilitating agent. The proper balance between the organs of *nutrition* and those of excretion—between the supply and the waste—is pointed out as an essential condition of health, not only in infancy, but at every period of life. The organic and the animal functions, and their relative influence on the organism, are described.

Chapter sixth teaches "The Management of the Infant immediately after Birth." The details under this head we must suppose are familiar to the practicing physician, and, therefore, need not be repeated here. In one important particular, professional opinion, or, at least, passive consent, favors the absurdities of fashion. We refer to the matter of dress of infants, whose comfort and health would seem to be the last thing thought of by mothers who usually have the control on these occasions.

In the chapter on the "Food of the Infant," much wholesome advice is offered on the nature and action of the mother's milk, the intervals between suckling, and the regular periods for this process, which ought to be observed from the earliest infancy, and attention to which will prevent the mother from letting the infant go to sleep on her bosom, and tug at short intervals at the nipple. The mode of life of the mother when nursing, and the food of infants on the appearance of the first teeth before weaning, also the manner and best time for weaning, and caution against the abuse of medicine, are topics brought up and discussed in due succession.

"Cleanliness, Exercise, and Sleep in Infancy," are the topics of chapter eighth. "In infancy, cleanliness is of the first importance to health," and the requirements in this respect are to be carried out by immersion of the entire body in a warm bath suitably arranged for the purpose, as far preferable to the imperfect mode of washing in a tub, or, worse still, on the knees of the mother or nurse. "The best time for washing it is in the morning as soon as it is taken out of bed; and for bathing, the evening, after its last meal, and before being put to sleep." The younger the child, the more necessary is it to adhere to a particular standard of temperature of the water: this should be 96° F., and gradually reduced as the child grows older, to that of a tepid bath. Fresh air is an important, but much neglected supplement and auxiliary to the bath, especially when this is taken at a reduced or cold temperature. The enjoyment by the child of the air bath of Franklin is recommended. As regards exercise, "the child can scarcely be too much in the open air, if the morning and evening chills and dews be avoided," it being understood that the period should be cautiously and gradually extended, from fifteen to twenty minutes at first, to an hour or two, and at last to several hours a day in proportion as it can be borne. A *sitting posture* for the infant should be carefully avoided by the nurse, for at least the first four or five months after its birth. The nurse should change from time to time the arm on which the child rests. "The common custom of dandling, swinging, and jolting of very young infants is highly improper." On the subject of sleep, notice is taken of the inconceivably great mischief done by many mothers and nurses who, in order to quiet a restless child, are in the habit of resorting immediately to laudanum, sedative drops, spirits, and other means of an analogous nature. "Flowers and strong smelling perfumes should be excluded from the sleeping apartments of infants, as they act injuriously on their nervous system." The prohibition ought to be extended to the sleeping rooms of persons of all ages.

"On the Choice and Regimen of a Nurse," the subject of chapter nine, we find excellent advice. "A tranquil and even temper are particularly desirable in a nurse, and care should be taken to inquire into this point." In the choice of a nurse a well-informed physician should always be consulted. "Artificia nursing" ought never to be had recourse to, unless the mother is unable to suckle the child, or a suitable nurse cannot be procured. Reference is made in this chapter (ten) to the Appendix, in which will be found a full account of the milk of different animals compared with that of women.

Much wise remark and advice will be found in chapter eleven, on "The Nursery and Conditions required in it." Beginning at the foundation, the author treats of the *site of the house*, the *nature of the soil* on which it stands, the *position of the nursery, the ventilation of the nursery.* Additional illustrations are given in proof that the higher mortality in cities is owing to the insalubrity of the atmosphere, and one of the great supports of this morbid condition is the want of ventilation. "However suitable in size and situation the nursery may be, adequate *ventilation*—that is, a *frequent*, and still better, a continuous *renewal* of the air contained in it—is indispensable to health." This advice is not meant, however, to imply exposure of the young inmates to cold draughts or sudden cooling of the air of the room.

With equal wisdom does the author discourse, in subsequent chapters, on the "Management of the Infant during Teething," and of "The Child from Weaning to the end of the Second Year." For the elucidation of the higher questions of "Mental Constitution and Principles of Training in Infancy," "Moral Education in Infancy and Childhood," and further remarks on the "Moral Management of Infancy and Childhood," we must look to the concluding chapters bearing these headings. It is here that the true philosopher shows himself, as a careful delineator of the actual compound condition of the young being, and a drawer of logical sequences for the intellectual and moral guidance, or the proper education of childhood. Truly are we told that, as "whatever tends to modify the corporeal or mental constitution of man tends to have a permanent influence on him for good or for evil, it follows that although education, technically so called, is generally delayed till the age of five or six years, real education, or the influence of surrounding circumstances, begins at birth, and often lays a durable foundation for the future bodily and mental character, even before the dawn of distinct consciousness."

We shall close this notice of Dr. Combe's work referring to the probable causes of his attention having been early directed to the subject of the management of infancy. They were of a personal nature, and grew out of the circumstances under which his own childhood was passed. His father, George Combe, as we learn from the Life and Correspondence of the Doctor, written by his brother, George Combe, was a brewer in Edinburgh. The spot on which the family resided was called "Livingston's Yards;" it was low, damp, and in winter shaded from the sun; and the dwelling-house was insufficient to afford comfortable accommodation to the large family which inhabited it. Andrew was the fifteenth child and seventh son, and, in common with all the members of this numerous family, suffered largely from the vitiated air generated in close and imperfectly ventilated rooms, especially during the night. The same want of aeration was exhibited in the clothes and bedding; and if to the neglect, in these ways, we add that of general ablution or bathing, the more surprising, where warm water was constantly at hand, we shall find an explanation of the appearance of disease and impaired constitution in the children. Such is the description, by his brother George Combe, of the want of sanitary practice, the result of ignorance of the subject, at "Livingston's Yards;" and such is the conclusion drawn by Dr. Combe, in a letter to his brother George. The following paragraph in the same letter conveys a reproof which we fear is not undeserved by a goodly number of the medical profession at the present day:—

> "Our parents erred from sheer ignorance, but what are we to think of the mechanical and tradesmanlike view of a medical man who could see all these causes of disease subsisting and producing their results for year after year, without its ever occurring to him that it was part of his solemn duty to warn his employers, and try to remedy the evil? All parties were anxious to cure the disease, but no one sought to remove the cause; and yet so entirely were these causes within the control of reason and knowledge, that my conviction has long been complete, that if we had been properly treated from infancy, we should, even with the constitutions we possessed at birth, have survived in health and active usefulness to a good old age, unless cut off by some acute disease. In my individual case, I can trace with ease the causes which have combined to impair my stamina and cut short my life; and almost every one of them could have been avoided with facility, had either our parents possessed the knowledge which I have endeavored, by my writings, to convey to other parents, or their medical advisers had a proper sense of their own duties, or of the responsibilities attached to them. Under all disadvantages, I have shown a tenacity of life which leaves a very strong presumption that, under good management, I might have gone through an active life of seventy years."*

Dr. Combe died August, 1847, a little before the completion of his fiftieth year. He had been the subject of frequent attacks of pulmonary disease, which on several occasions brought him to the brink of the grave. "Such, indeed, was his condition," as remarked by Sir James Clark,

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* Life and Correspondence, pp. 34, 35, Am. edit.

"that it might be truly said of him that the greater part of his life was one long disease." He spent winters in the south of France and in Italy, and, at a later period, two seasons in Madeira. His remarks on the climate of these places, and of their fitness as a residence for invalids, in letters to his friends, are acute and discriminating. One of the most interesting events in the professional life of Dr. Combe was his appointment as physician to Leopold, King of Belgium, in the year 1835. His frail health prevented him from long enjoying this honor, and he was obliged in consequence to leave Brussels and return to Edinburgh. The short intercourse between the sovereign and his new physician was alike honorable to both. Encouragement for the exercise of a strong will, under the impelling motive of enlarged benevolence, is offered in the following passage by Sir James Clark: "Yet, by the judicious management of himself and frequent changes of climate, and by a careful adaptation of his mental and bodily labors to his powers of endurance during the periods of comparative health which he did possess, he continued, in a quiet, unostentatious way, to do much good during his too short life, and he has left behind him writings which are of the utmost value to mankind."

Dr. Combe paid a short visit to the United States in the early part of the summer of 1847. He passed a few days in Philadelphia; but such was the delicate state of his health that he was unable to meet his professional brethren of this city at even a small reunion projected for him by the writer of the present article.

ART. III.—*On the Theory and Practice of Midwifery.* By FLEETWOOD CHURCHILL, M.D., M.R.I.A., Fellow of, and Professor of Midwifery and Diseases of Women and Children in the King and Queen's University in Ireland, etc., etc., etc. With additions by D. FRANCIS CONDIE, M.D., etc., etc. With one hundred and ninety-four illustrations. A new American, from the fourth corrected and enlarged English edition. 8vo., pp. 655. Philadelphia: Blanchard & Lea, 1860.

IT is not our intention to enter upon a formal review of the treatise of Dr. Churchill. The work has been too long before the medical public to render it necessary that we should at this time attempt any labored exposition of its claims to the character of a true and faithful exponent of the theory and practice of midwifery. The unanimous verdict of the profession in this country and abroad has been rendered in its favor; and it has been assigned a high rank among our standard systematic treatises, adapted alike for the use of the student and the practitioner of obstetrics.

Nothing more would seem to be demanded of us than to announce the appearance of a fourth edition and its American reprint, and point out some of its claims to our special notice.

In the present edition, Dr. Churchill, with that untiring industry so strikingly evinced in the preparation of all his works, has subjected every chapter to a thorough and careful revision, altering, amending, and adding to each, so far as his own experience and that of others has shown him to be demanded, in order to render his teachings, throughout, a clear and correct reflection of the actual condition of midwifery as a science and as an art.

There would be no little injustice done were the treatise of Dr. Churchill to be viewed in no other light than as a mere compilation from the writings of others. The author, it is true, has made free use of the valuable materials furnished him by his predecessors and contemporaries, but in no instance has he adopted as true the observations of others, however high may be their standing; or as correct their deductions, without having first instituted a careful scrutiny into their faithfulness and validity. The work before us is not, therefore, to be received simply as an exponent of what "the masters in obstetrics" have taught, and still continue to teach as true in theory and proper in practice, but as presenting, in addition to this, the evidence of the author's own experience and investigation in proof of the correctness of the teaching of others. It presents, consequently, a legitimate claim to the character of an original and safe guide to the learner, and, at the same time, an authoritative book of reference for the practitioner in his hour of need. It may be more safely recommended in both capacities from the perfect honesty with which its author has, in every instance, treated the opinions and contributions of his predecessors and contemporaries, the modesty with which his own views and observations are brought forward, and the perfect candor with which he invariably acknowledges a change in his opinions, whether in reference to a question of doctrine or of practice, when such change has been shown by sufficient evidence to bring him in closer relationship with the actual and the true.

In no portion of the treatise is this readiness of Dr. Churchill to go without hesitation wherever truth shall lead him more strikingly evinced than in the chapter on puerperal fever. The account it presents of the etiology, pathology, and treatment of that much-dreaded disease, it is true, is still somewhat confused and indefinite. When compared, however, with that given in the earlier editions, it will be found that the facts developed by the more intimate investigation to which, within a very recent period, every question connected with the nature and causation of child-bed fever has been subjected, by physicians enjoying the necessary opportunities, in different parts of the world, has produced an important modification of his views in respect to the character of one, at least, of the forms of the disease—its epidemic, or, as Dr. Churchill denominates it, its malignant form.

In reference to this, he very candidly acknowledges that "more extended experience has led him to doubt the accuracy" of the views of its pathology, taught by him in the earlier editions of the work under notice. He had in them adopted the views of those pathologists who refer puerperal fever invariably to a simple inflammation of the uterus and its appendages, regarding the general febrile phenomena merely as symptomatic of the local phlegmasia, whereas now he is convinced the disease "is something more than a local affection, and that the constitutional affection is often rather primary than secondary."

Nearly as important a change has taken place, also, in his views in respect to the etiology of puerperal fever. He fully recognizes its close relationship to epidemic erysipelas; its contagious character; the possibility of its being communicated from one puerperal female laboring under it, to another who is not, through the intermediacy of a third party apparently free from disease; and its intimate dependence upon a morbid condition of the blood, produced either by atmospheric malaria or contagious matter from without, or by the absorption of some noxious matter generated within the body of the patient.

We would call especial attention to the section which treats of the gastro-enteric form of fever incident to puerperal females. This affection, it is certain, cannot with propriety be considered as in any way related to true puerperal fever; still, we admit the propriety of treating of it in connection with the latter disease. It occasionally occurs as an epidemic, and in its early stages presents often a character of apparently great severity. From these circumstances it is liable, when it makes its appearance, to occasion a very great degree of anxiety, and to lead to the adoption of an active treatment by no means required in the management of a disease of comparatively only secondary importance. The account given by Dr. Churchill of its leading characteristics and usual course, though short, is replete with interest. We shall present, for the benefit of our readers, an outline sketch of it; inasmuch as the form of gastro-enteric fever referred to, while of much more frequent occurrence than is generally supposed, is but illy understood, and, in consequence, very apt to alarm and mislead the inexperienced practitioner. The description of the disease given by Dr. Churchill is the fullest and most accurate that we are acquainted with.

From his own observations during the epidemic prevalence of the disease in Dublin, in the years 1851 and 1852, and in isolated cases, he describes the attack as almost invariably occurring within one week after delivery—usually from the second to the fifth day. It is mostly marked by rigor, not very severe, however, but sufficiently well marked. In a few cases the rigor was repeated at the end of a week. The most striking symptoms of the attack are pain and diarrhœa. The pain comes on early—extending, at first, over the whole abdomen; being increased in paroxysms, and continuing until relieved by medicine. As the pain declines, it is experienced to a greater degree in one region—the left iliac—than in any other. After the first severe attack, frequent flatulent pains, with a great discharge of wind, are invariably complained of. There is, usually, tenderness of the abdomen proportionate in degree to the severity of the pain. When, however, equal and firm pressure is applied continuously, it gives relief instead of increasing the suffering. The tenderness is to the least extent over the uterine region. Diarrhœa is present in every case, even when the bowels, as is sometimes the case, are confined and loaded at the commencement of the attack, or when large doses of opium have been given for the relief of pain. The diarrhœa is unattended with either nausea or vomiting. In some cases the stools are few in number, but large in quantity, and unhealthy in appearance; in others they occur with great frequency and are followed by considerable exhaustion. The pulse is at first always frequent; from one hundred and twenty to one hundred and forty strokes in the minute. It gradually subsides as the distress of the patient diminishes. In a few instances, however, it has been known to continue of increased frequency for many days. There is, at first, increased heat of surface, but which soon subsides. There is, in general, a good deal of perspiration—occasionally it is excessive. Previously to the exhibition of opium, no thirst is complained of. The tongue is white, but not loaded or dry. The secretion of milk is very seldom disturbed. The lochia are, at first, generally diminished in quantity, or entirely suppressed, but return again uniformly in the course of a few hours. Occasionally they have a heavy smell for a day or two, at the end of which period they become natural and healthy.

As a general rule, the attack of the gastro-entric fever of child-bed lasts about a week. It is seldom that those attacked by it become convalescent at an earlier period. In a few instances the disease continues for a day or two longer.

Dr. Churchill believes the disease to be dependent upon severe irritation of the gastro-intestinal mucous membrane, of which the intense febrile excitement is symptomatic, the cause by which the intestinal irritation is produced being as yet unexplained. Occasionally, the womb and its appendages become involved, as indicated by the increase and permanency of the fever, perhaps its change of type; by the permanent suppression of the milk and lochia; and by the local tenderness on pressure over the uterine region. Such a complication places those cases in which it occurs in a very different category from those where the disease retains throughout its simple character, rendering, what is otherwise an affection of little danger, yielding readily to very simple treatment, one of more serious import, and which is not altogether safe from a fatal result.

It is only on its first onset that the disease just described is liable to be confounded with genuine puerperal fever. In those cases where the attack is attended by no complication, only a very few hours can elapse after its onset before its true character will be sufficiently revealed to obviate all unnecessary alarm.

The chapter on sudden death after delivery, which was introduced, we believe, for the first time, in the third edition, is replete with the most intense interest. It furnishes the best and fullest account we are acquainted with, in reference to the fearful accident of which it treats; and demands a careful study on the part of every one engaged in, or who is about to engage in the practice of obstetrics. Not that by the closest study of it he shall be able to learn the means to prevent, perhaps, in a solitary case, the occurrence of an event of which he is scarcely ever furnished with the slightest admonition—it being usually as unexpected as it is appalling. But with the hope that a close investigation of the causes by which it has been shown to be produced, and the circumstances under which it ordinarily occurs, may enable him to institute, at an early period, a judicious prophylactic course of treatment, in the hope that, in this manner, he may be spared the severe trial of beholding a young mother, whom he had but now congratulated upon her safe delivery, and fair prospect of a favorable getting up, become suddenly, and without any apparent cause, transformed into a lifeless corpse.

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To the edition before us there is appended an essay on a subject which, though it never has been discussed before in any treatise on midwifery, is nevertheless of very great importance. The subject is "Obstetric morality"—or the right of the obstetrician to perform the operation of craniotomy whenever it becomes the sole means by which a chance is afforded for saving the life of the mother. The leading questions involved are discussed by Dr. Churchill with the utmost candor and ability. The circumstances under which, alone, the obstetrician may venture to destroy a living child, to insure the safety of the mother, without offending against morality or religion, are examined with care, and the legitimate conclusions deducible from an examination of all the considerations requisite to be taken into account in the formation of a correct judgment, are clearly announced.

Dr. Churchill is no advocate for the operation of craniotomy. His earnest desire is to restrict it within as narrow limits as possible compatible with a due regard for the greater value of the life of the mother in comparison with that of the unborn babe—which latter, we are to remember, must necessarily perish with her, in all those instances in which craniotomy is at all justifiable, should the operation not be resorted to. He urges the necessity of conducting, as far as possible, all cases of difficult, obstructed, or complicated labor, in such manner as shall most effectually conduce to the safety of both mother and child. Whenever it is possible, he would insist upon an early resort, in such cases, to the forceps; or when it has become evident, from the contracted size or deformity of her pelvis, that a female cannot be delivered at the full term of a living child, he suggests that the propriety of the induction, in her case, of premature labor, should be carefully weighed. He lays it down as a law of invariable application, "that craniotomy is never to be contemplated when a living child can, by any means compatible with the safety of the mother, be delivered *per vias naturales*." He nevertheless shows most conclusively, that occasions do occur—happily, not very often—in which a resort to craniotomy is "not only necessary and justifiable, but imperatively demanded, even though the child be alive, if we would not voluntarily incur the responsibility of the mother's peril, and perhaps death."

No one can arise from the perusal of the essay under consideration, without a very full conviction of the importance of the subject discussed in it, the difficulties which surround it, and the very satisfactory manner in which it has been treated by the author. The substance of the essay first appeared in the *Dublin Quarterly Journal*, and was called forth by an article in the *Dublin Review*, in which the views of Dr. Churchill, in respect to craniotomy, as set forth in the earlier editions of his treatise on midwifery, are made the subject of animadversion, by one whom Dr. Churchill "strongly suspects is not a medical man."

In a second appendix are presented a series of very judicious remarks and instructions in reference to the qualifications and duties of "the monthly nurse." They are extracted, by consent of Dr. Churchill, from a little "manual for midwives and nurses" recently issued by him. The remarks and instructions are, confessedly, most excellent, and may, possibly, as the American editor supposes, "prove valuable to the young practitioner when called upon, for the first time, to take charge of the lying-in room." For ourselves, we believe that they would do far more good were they printed separately, in such a form as would permit of their being placed in the hands of the monthly nurse herself, for whose instruction alone they were expressly written. And provided, also, she could be induced to read, ponder, and inwardly digest them. They contain, certainly, the best summary we are acquainted with, of the ethics by which the nurse, in all her intercourse with her patient, and with the professional gentleman under whose charge the latter has placed herself, is to be governed.

With regard to the additions made by the American editor to the volume under notice, we have but little to say. We have no disposition whatever to dispute their fitness and general value. We would simply remark, that since the commencement of our career as medical journalists, we have protested against the practice pursued by many American physicians, of loaning their names as editors to foreign works on the various branches of the medical sciences. The practice, we are happy to say, is becoming every year less frequent, and we trust will before long entirely cease. We are convinced that to a certain extent it is a species of injustice on the part of the American bookseller, who thus appropriates for his exclusive profit the works of foreign authors, without any compensation to the latter; while, at the same time, it constitutes unquestionably an impediment to the increase and improvement of our national medical literature. It is proper, however, we should say in regard to the publication and editorship in this country of the work of Dr. Churchill now before us, as well as of his treatise on the diseases of females, that we are assured, from good authority, there has been an entire understanding with him; and that everything has been done in respect to both with his entire consent and approbation.

ART. IV.—*An Elementary Treatise on Human Anatomy.* By JOSEPH LEIDY, M.D., Professor of Anatomy in the University of Pennsylvania, etc. etc. Illustrated by 392 Engravings. 8vo., pp. 663. J. B. Lippincott & Co.: Philadelphia, 1860.

DR. JOSEPH LEIDY, as an ardent and intelligent cultivator of science, has few equals As a teacher of anatomy in one of the great and leading schools of the country, he has earned an enviable reputation. As a writer, his language, if not always classical, is never obscure or enigmatical. In a word, the Professor is one of the wide-awake men of the day; one of those who, by their talents and indomitable industry, have made their "sign" for posterity.

Dr. Leidy, in the work before us, appears in a new attitude. Heretofore, his name occurred only, or chiefly, in connection with the transactions of the Academy of Natural Sciences of Philadelphia, or the publications of the Smithsonian Institute at Washington, the pages of which bear ample evidence of the powers of his prolific pen. The Treatise on

Human Anatomy, recently issued from the press of Messrs. Lippincott & Co., is the first contribution which he has made to medical literature, properly so called.

In attempting to form a correct estimate of the merits of this work, which, as conscientious and truth-seeking reviewers, is our ardent desire, we must bear in mind two important circumstances: first, the object which Dr. Leidy had in view in composing it; and, secondly, the position which he occupies before the public as a non-medical practitioner; or, in other words, the fact that he is essentially, if not exclusively, a naturalist and a teacher of anatomy.

Before we proceed to discuss these topics, a few words may be said in reference to the necessity for such a work at this particular juncture in the history of our literature. The author seems to have been impelled to its publication by a laudable desire to gratify his pupils with a suitable text-book; and the manner in which he has performed his task is, as will appear by-and-by, at least highly creditable. That the work was really needed is a question which the reader must endeavor to solve for himself. There is certainly no dearth of treatises, native or foreign, upon the subject now, whatever there might have been twenty-five years ago. We remember the time when the principal text-books on anatomy were the works of Wistar, Bell, and Fyfe; and with what pleasure we greeted, as we waxed a little older, the treatises of Horner and of Quain, the latter in particular, because of its lucid style and its many other intrinsic excellencies. The appearance of the admirable System of Human Anatomy of H. Cloquet, translated by Dr. Knox, of Edinburgh, and reissued at Boston in 1830; and the Manual of General, Descriptive, and Pathological Anatomy of J. F. Meckel, translated by the late Dr. A. Sidney Doane, of New York, in 1832, and published in three portly octavo volumes, afforded us ineffable delight, such as a man thoroughly imbued with a genuine love for the science can alone experience. We felt happier, and for many years drew daily a longer breath, as we reflected upon these wonderful treatises, which we regarded very much with the same feeling with which the miser contemplates his hoarded gold. As time rolled on, the stock was augmented by the magnificent volumes of Quain and Sharpey, brought out, by-the-way, in this country, by the author of the treatise under consideration; by Granville Sharp Pattison's edition of Cruveilhier's matchless volume, entitled Human Anatomy, the very beau-ideal and perfection of such a work; by Erasmus Wilson's excellent System of Human Anatomy, edited by Dr. Goddard; and, lastly, the productions of our countrymen, Samuel George Morton, better known for his labors in natural science and ethnology; of T. G. Richardson, now Professor of Anatomy in the University of Louisiana; and of Dr. Handy, of Baltimore, besides some manuals of practical anatomy, as those of Agnew and Hodges.

The mere enumeration of these works shows the astonishing progress made during the last quarter of a century in anatomical writings, and how much greater the opportunities of the student are at the present day for acquiring a complete knowledge of the structure of the human body than in former times. The profuse illustrations which accompany most of the recent treatises on the subject form one of the most striking features of the art of teaching of the present age. During our pupilage such facilities were enjoyed only by the favored few, in the works of J. Cloquet, Mascagni, Lizars, and a few other masters of the science.

The work of the Philadelphia professor is an elementary one. This is clearly indicated by its title; it does not profess to be an elaborate treatise, and hence it should not be judged by a comparison with such productions as those of Hippolitus Cloquet, Quain and Sharpey, Meckel and Cruveilhier; productions which have earned for their authors not only a national reputation, but an enviable immortality, as worthy disciples of Andrew Vesalius, and of the anatomical school of the nineteenth century. These great masters have all written for the future as well as the present; their object was not an ephemeral notoriety, but an enduring fame, founded upon patient and laborious research, and an exactitude of description which challenges alike our gratitude and our admiration. The treatise of Dr. Leidy has no such lofty pretensions; his aim has been to supply his pupils with a convenient and useful text-book during their attendance upon his prelections, and no one that has examined its pages will say that he has fallen short of his object. If clearness and accuracy of description, systematic arrangement, and condensation of matter are commendable qualities, we know of no work on anatomy, native or foreign, which possesses these qualities in a more eminent degree. Nothing, indeed, could be more admirable, and in this, we conceive, consists one of the great merits of the book. Originality is not to be expected in a treatise on descriptive anatomy; all that an author can hope to do is to present his topics in as lucid, concise, and graphic a style as possible, so that the student may have no difficulty in following the teacher in the lecture-room, or in tracing out the parts upon the dead subject by his own unaided efforts. If we have any fault to find with Dr. Leidy, it is that he writes too much like a naturalist, and not enough as a medical man. His book is too rigidly descriptive. It is too tightly bound with the hoops of special anatomy. It eschews physiology and topographical anatomy altogether, or so nearly as to amount virtually to the same thing. It does not even deem it worth while to give, at any length, the combined actions and relations of the muscles, so important in regard to fractures and dislocations, and it nowhere affords us a satisfactory view of the anatomy of the more important surgical regions. In these respects we consider the work defective, and we have little doubt that the learned author must by this time think so himself. We know, however, of no one more competent to supply these deficiencies than he.

The microscopical part of the work bears evidence of Dr. Leidy's personal researches; brevity and clearness are here, as everywhere else, characteristic features. He fully believes in the value of the microscope, but does not permit it to take precedence of the knife.

The work is printed on yellow tinted paper, and is illustrated by three hundred and ninety-two wood-cuts, executed in the highest style of the art, by Mr. August Wilhelm, of this city. About one hundred and twenty of the engravings are original; the remainder having been selected from various sources. As a specimen of art—including paper, typography, and engraving—it is one of the most beautiful productions that have ever emanated from the American press. It is admirably adapted to the wants of the pupil, and will, no doubt, be well received by the profession generally.

We notice, as one of the most agreeable features of this work, a substitution of English for Latin names, with their proper accentuation. We have long been in favor of such a change, and we congratulate Dr. Leidy that he has had the courage to shake off the fetters of the old nomenclature, so distasteful to the true scholar, and so embarrassing to the student. In a MS. work on anatomy, written nearly twenty years ago, we adopted this method, afterwards followed, at our suggestion, by Professor Richardson, in his excellent work on anatomy, published by Messrs. Lippincott & Co., in 1855. We trust that the example set by these able teachers may have the effect of turning the minds of the other lights of the profession into the same channel. The anatomical jargon of the schools is an abomination, opposed alike to sound science and to good taste.

In order, apparently, to atone for this innovation, Dr. Leidy has deemed it necessary to give, in the form of foot-notes, what he calls "a copious synonymy." We cannot say that we approve of this arrangement. It would have been much more convenient for the pupil if the synonymy had been included in brackets in the same line with the English term. Moreover, the synonymy is exceedingly overburdened, recapitulating as it does all the barbarous names that have been applied to anatomical objects since the days of Herophilus. The following may serve as a specimen: the author is speaking of the molar teeth :—

> "Dentes molares; large molars; true molars; dentes multicuspidati; dentes maxillares; clavales, or gomphii; molæ; mylodontes; mylæri; momisci; cheek teeth; wall teeth; log teeth; grinding teeth."

We can hardly imagine that the distinguished author could desire the pupil to charge his memory with such a mass of rubbish, now only to be found in old, obsolete works on anatomy, which no physician of the present day has either the inclination or the leisure to study. A few of the more common synonyms would be quite sufficient in any modern work on the subject, and the space thus consumed in this otherwise excellent work might, it seems to us, have been more usefully appropriated to topographical anatomy and the conjoined action of the muscles.

ART. V.—*The Mountain.* By R. M. S. JACKSON, M.D., Corresponding Member of the Academy of Natural Sciences of Philadelphia; and of the Corps of the Geological Survey of Pennsylvania, etc. etc. Philadelphia: J. B. Lippincott & Co., 1860. pp. 632. 12mo.

WHAT a combination, medley rather, have we here of science and satire, philosophy and fun, which sometimes borders on the ridiculous, and again rises into the humor of Rabelais and the quaint sentiment of Montaigne! Changing the figure, we might speak of this volume, "The Mountain," as a table, set out with dishes rich and nutrimental, and with *entremets*—side dishes—seasoned and spiced, sometimes with artistic skill, and, again, so pungent with Cayenne and mustard as to make one's mouth a little awry by lingual and palatial contortions.

Dr. Jackson's "Mountain" is made by him to represent the entire group of the Alleghany or Appalachian Mountains which extend through eleven degrees of latitude, in a direction nearly parallel to the Atlantic, and hence they are sometimes called the Atlantic range; distant from the ocean fifty to one hundred miles, and comprising a belt of from fifty to one hundred and fifty miles wide. With so vast a range of prospect and of travel, amid scenery the most diversified—mountain spires pointing to the blue empyrean; chasms which might serve as openings to the dread abyss; jutting crags and widespread ledges; endless forests, the home of animals of every size and kind, from the quick, bounding elk to the humble mole, from the eagle soaring aloft with widespread wings to the thrifty but restless wren and the ruby-throated humming-bird, eater of nectar; streams musical in their first ripples, destructive in their rapid downward descent, and carrying with them fertility when they reach the plains below, and containing in their waters a finny world,—the author, perched as he is on the summit of the Pennsylvania Alleghany Mountain, might almost imagine himself "monarch of all he surveys," and be excused if, under the exhilaration of mountain ether, he sometimes gives utterance to thoughts and feelings which to our duller perceptions in the lowlands may seem to be extravagant and in magnified proportions. He describes in a vigorous style the scenes and objects which come under his observation in the different realms of nature, and infuses into the mind of the reader a portion of his own enthusiasm while roaming through them. The very first pages, under the head of "A Word to the Subscribers of the Mountain," are so characteristic, and must so fully enlist the sympathies of the country doctor, that we cannot forbear from introducing the initial paragraph to our readers:—

"Are you a country doctor? Do you '*pull teeth?*' Are you your own cupper, bleeder, leecher? Are you your own druggist, filling out in detail your own prescriptions? Are you surgeon, midwife, general practitioner; and have you no time to get fame and money, through any of the specialties of the profession —diseases of eye, ear, lung, stomach and bowel, cerebro-spinal axis, women and children, because you are 'boy of all work,' and have to treat them all? Are you occasionally pig, cow, and horse doctor for the neighbors? Are your patients scattered over a large and diversified surface, which you must traverse on horseback, through swampy roads, wildernesses of fallen timber, traps, deadfalls of roots, and endless continuities of black forests; and do you really *go* in all sorts of weather? Are your patients so inaccessible that most of your time is consumed in merely destroying space to get to them; and have you actually *anything to do* in your profession; and when you do your work, have you five times as much trouble to get your bills as to make them at first, your patients knowing better than you do, *what you ought* to charge, and just *when they ought* to pay? Possibly, to get along, you may be trying to farm a little, endeavoring to scratch some hard patch of desolation into agricultural propriety, or bravely to make, like the hero of 'Life in the Woods,' some tough glebe 'say beans!' This is all very well, and no doubt you will have your reward in heaven. But permit me to ask you a few more questions, absurd and ridiculous as such questions may appear to common sense—and improbable as it may be to expect any answer: Are you trying to write and publish a book, in the midst of all this horror and distraction—nights of sleepless anguish, days of despair? Are you trying to repose and dream in a drum, or paint a picture seated with your easel on a log-sled hauled by a team of oxen over the rocks, roots, logs, and stumps of a spruce-pine clearing; in short, have you been trying to do in the broils of Bedlam that which, to do aright, you should have quiet, absolute repose from all care and anxiety, still nights of vision, golden mornings of ecstatic influx, and brave days of spiritual wrestling, inspired by the gentle, heroic, and loving sympathy of the living, with solemn beckonings and greetings of grace and holiness from the dead? Then, did I understand you to say that you were two hundred and fifty miles from your publishers, two hundred and fifty miles from libraries of any extent, where you could have access to books of reference and quick facilities for correcting proof, and so on? And you have really, under all these difficulties, been going through the torments of that everlasting stone-rolling of Sisyphus of 1700 ems in the page, i-dottings, t-crossings, commas stuck in by nineteen elaborate rules, colons by five, semicolons by five, periods by five, etc.?

"These interrogations you answer all in the affirmative? Well, then, on thy brow be written FOOL! for a 'thousand years in heaven cannot recompense your miserable heart' for such a blunder, or 'make you capable of one brief joy,' after such a hideous folly! 'Ah, me! miserable! which way shall I fly?'"

In another passage, in a note, the author tells us:—

"Think of a country doctor practicing medicine in two firms, making fire-brick in one, sawing lumber in another, selling drugs in another, and speculating in mountain lands and building Health Institutes on his *own hook, all at one time!*"

He adverts, in a strain half humorous, half melancholy, to the motives which induced him to adventure on the mountain; and, claiming a superiority of country over town life, he makes an ethnological remark on the two varieties of the typical Caucasian—the Celtic and the Teutonic—renews his apology, and assigns his reasons for the delay in bringing out his book.

The preface, or "Prolegomenon," is in part a narrative of the origin, and in part an explanation of the benefits of the *Sanitarium* established by Dr. Jackson at Cresson, at the very summit of the Alleghany, on the road between Philadelphia and Pittsburg, and which is now under the direction of a company chartered for the purpose. A plea for Hygeia by illustrations sentimental and physiological, set forth in a quaint fashion of language, makes up the larger part of the preface. The author indicates, at the same time, the chief heads of the subjects to be treated of in the body of the volume.

"It is obvious, then," he tells us, "that some shape of bill of fare for this soul and body was necessary to be rendered—some statement of the availableness of the mountain in all its aspects of use, health, beauty, and teaching, or worship, ecstasy, progress, and salvation." First cômes the "Geology of the mountain," as "the basis or substratum of its story—the *skeleton*, the great primordial frame-work of its wondrous body. Naturally upon this would come the enveloping mineral mass, earth-cloak or integument of the same, that is, the *soil*. Then the circulating fluids would attract attention, and the story of the waters—mineral, thermal, and pure—would appear in due order of sequence. In the chain of natural causation would follow the "Flora," the plant or vegetable life clothing of the mountain, which is again dependent upon the soil, water, climate, etc., of the same—associated with all of which would arrive a chapter of its "Fauna" or animal life. A catalogue of animals, namely: mammalia, birds, reptiles, and fishes, which inhabit the mountain, or a hurried enumeration of the different orders of creation in that department would be required. Then would arrive a consideration of the ocean, of air above, upon which all created beings depend, the great medium of existence, the reservoir of vitality or life currents."

The plan thus sketched has been carried out by Dr. Jackson with a fullness of description and detail instructive in matter, and often interesting in manner. In these respects, the work will be found useful for reference by the naturalist and the physician, and it has besides large claims on the general reader. It ought to find a place in the library of every country physician, for his own delectation and the benefit of his students, who will be taught in it to commune with nature under the guidance of science. The town physician will be told in its pages of a mountain Sanitarium, and of various mineral springs to which he may send his patients, with every prospect of their regaining their lost health and strength, and learning at the same time a life-lesson that shall show the recuperative powers of pure air and pure water, and of exercise and sports which, while acting primarily on the body, exert a magical influence on the mental and spiritual faculties of our being.

These topics are enlarged on in the "Second Book," in chapters under the heads of "Æsculapius" and of "Hygeia." In the first of these, the antiquity, dignity, and functions of the true, as opposed to the spurious physician, are enforced; and unerring thrusts made at the shams and follies of the day on the pretenses to cure disease by various juggleries. We wish that room were allowed us for more extracts, to show the manner in which the author deals with some of the high-priests at their pagan altars. The following is to the point:—

> "A desperate sportsman was this Hahnemann. Like the swallow-fishers on the towers of the Alhambra, flinging their flies to the wind for winged prey, he cast his lines into the vacuities of infinitude, flung out his world-wide nets of spiritual cobwebs, and, after divers hopeless rakings of the seas of space, returns with his basket crowded with shining prey: the *world's riddles* read, the sphinx's story told, mankind physically redeemed by spiritualized sugar-molecules under the divine guidance of a newly-invented force of the universe called 'similia similibus curantur.'"
>
> "From the region of shades and mysticisms comes also this portentous humbug of the times, the cure of all diseases by water alone, this thing called Hydropathy. The modern author of this revelation is one Preissnitz, a peasant, who, being the seventh son of a seventh son, and born on Christmas night, was thus, by an eternal edict, a law of foreordination, made the recipient of that rarely condescended compliment of the supernal's creative genius."

Freshness and point abound in the short chapter on Hygeia: apt use is made of the works of Hufeland and Herbert Mayo on the occasion.

Two episodical chapters, entitled "Antæus the Giant," and "Pan, a Symbol of the Universe," terminate the work. They contain passages of no little power and eloquence on the great theme which seems to be ever present to the mind of the author, viz., man's physical regeneration and associate moral purity.

ART. VI.—*An Epitome of Surgery.* By J. BEADNELL GILL, M.D. 36mo., pp. 94. H. Baillière, 1860.

WE learn from the title-page of this book that this is not the only attempt on the part of Dr. Beadnell Gill at authorship. His first publication was an "Epitome of Botany;" and it would also appear that he had been "Late House Surgeon, etc. etc. at the London Hospital." What the "etc. etc." mean we are not permitted to know; and as we do not care about conjectures where facts alone can be of use, we shall not stop to inquire. Perhaps Dr. Beadnell Gill may condescend to enlighten us upon the subject in some future edition of his work. We regret the omission, simply because we are anxious to place before our readers the full claims of the author to their respect and confidence as a writer upon so important a subject. Mr. Baillière deserves great praise for bringing out the work simultaneously at London, Paris, Madrid, and New York, thus laying it literally at the feet of every physician panting for knowledge, both in the Old World and in the New. But, above all, has he entitled himself to the gratitude of the profession for his ready appreciation of the merits of this work, and for the handsome manner in which, to use a somewhat hackneyed phrase, it has been gotten up.

Our readers have often been told that there is no royal road to knowledge, but that its paths are devious and rugged, if not actually strewn with thorns and briers. They will therefore be not a little gratified to learn that there is now a macadamized road to at least one branch of science, namely, that of surgery, an exploit which a benificent Providence had reserved for the present age, its happy instrument being Dr. Beadnell Gill, the author of the work under consideration. In a preface, remarkable for its brevity, dated "Dover, September, 1860," he modestly remarks:—

> "If I have, in any degree, macadamized the road to the theory of surgery, I have accomplished my wishes. I must, however, remind the student that a practical acquaintance with the science is only to be obtained in the wards, the dissecting and out-patients' rooms, and the dead-house."

Dr. Beadnell Gill should have no cruel apprehensions about the success of his work. We trust that the medical press of this and other countries may speedily relieve his mind of any suspense or misgiving upon the subject. The work is a master-piece of its kind, putting to shame and confusion all its predecessors in the same branch of science; and our only wonder is that, when he had finished his "macadamized road," he did not, like Theophrastus Bombastus Paracelsus, kindle a big fire and throw into it the now obsolete and speedily-to-be-forgotten tomes of Boyer, Nélaton, Velpeau, Langenbeck, Chelius, Miller, Ferguson, Gross, Erichsen, and similar dreamers and impostors, who have done so much to defraud the student of his time and money. Within the compass of ninety-six 36mo. pages, of which two are occupied with the index, Dr. Beadnell Gill has compressed all that is really necessary to be known of the art and science of surgery, and that, too, for the very reasonable sum of **One Shilling** of her Britannic Majesty's money. Surely the whole profession should rise up as one man and call the author blessed. We trust that Dr. Beadnell Gill has retained the right of translation and reprint of his work, now so common among his brethren; otherwise it can hardly fail to become an object of piracy with the various nations of the earth, in their desire to possess so great a treasure. Mr. Baillière will no doubt see that his protegé is substantially rewarded for his exhausting labors and anxiety. If the author lived in this country, we should advise him to take out a patent right for his cerebral condenser, by whose wonderful agency he has succeeded in supplying the world with this "macadamized road to the theory of surgery."

Knowing that the work of the immortal surgeon of Dover will speedily find its way into the hands of our readers, it would be idle to indulge in extracts. We cannot, however, forbear giving the following passages as specimens of his wonderful compressing faculties:—

> "INGROWING OF NAILS:—*Treatment.* Insert a small piece of lint soaked in liq. arsenical, as far as possible between nail and rising granulations. Cures in about a fortnight. Extraction of a nail or even part of it is barbarous and unnecessary.
>
> "ONYCHIA:—Maligna. Unhealthy ulcers about roots of nails—*Treatment.*—Liq. arsen. locally.
>
> "WHITLOW:—Abscess about fingers. Three kinds: Cutaneous, Subcutaneous, and Thecal:—*Treatment.*—First two, poultice and shave off cuticle; third, see page 33."

In taking leave of our author we trust that we shall soon have the pleasure of greeting him again; for it cannot be supposed that he will relax his efforts to benefit his profession. A man who is so adroit in macadamizing would indeed be reckless alike to his duty and to his interest if he did not try his hand in simplifying some of the other branches of medical science. A macadamized road to the theory of medicine, obstetrics, physiology, or chemistry could not fail to confer upon the name of Beadnell Gill additional lustre. Our only fear is that he may overtax his brain, and thus become an early martyr to the cause of science.

To his present performance the distinguished author may proudly apply the lines of the poet:—

"Jamque opus exegi; quod nec Jovis ira, nec ignis,
Nec poterit ferrum, nec edax abolere vetustas."

ART. VII.—*Memoranda Medica, or Note-Book of Medical Principles. Being a Concise Syllabus of Etiology, Semeiology, General Pathology, Nosology, and General Therapeutics. With a Glossary. For the Use of Students.* By HENRY HARTSHORNE, A.M., M.D., Professor of Theory and Practice of Medicine in the Medical Department of Pennsylvania College, etc., etc., etc. *Ωφελεειν ὴ μη βλάπτειν.* "*To heal, or not to harm.*" 12mo., pp. 190. J. B. Lippincott & Co.: Philadelphia, 1860.

IT is difficult to convey, by any verbal description, a correct idea of these "memoranda." Although in their conception they can scarcely be esteemed original, they are eminently so in their execution. They are intended, the author remarks, to occupy "a position intermediate between the professor's skeleton synopsis or syllabus and the elaborate treatise or text-book." If, however, a syllabus may be defined properly "an abstract or compendium"—varying within certain limits, in respect to its scope and fullness—the appellation may then with strict propriety be applied to the work before us. It can, in fact, be considered in no other light than as simply a syllabus of the fundamental and introductory portion of the course of lectures delivered by the author in the department of the theory and practice of medicine—presenting a brief, lucid, and accurate outline of medical principles.

In defining the work of Dr. Hartshorne a simple syllabus of the institutes of medicine, we desire not to be understood as in the slightest degree depreciating it. It is, in fact, so defined by the author himself, on the title-page. We would remark that we consider the talents that are required for the preparation of a good syllabus to be of no contemptible character. Besides a perfect familiarity with the subjects of which it professes to be a compendium, and with their relationship and co-ordination, there must be, also, a facility in condensation, with a proper regard to perspicuity, which it will be found is possessed but by very few, comparatively speaking.

The work before us—no matter what may be the appellation given to it—is unquestionably a most interesting one, and one which, within its appropriate scope, is most ably executed. It exhibits a very fair view of the more important points relating to the subjects embraced in it, all of which are set forth with great conciseness, but, at the same time, with the utmost clearness and accuracy. We have seldom indeed met with, in any medical work, a series of definitions which, like those that appear in the memoranda of Dr. Hartshorne, convey, in as few words, so full and definite an idea of the subjects to which they refer. The work before us furnishes precisely such a manual as may be used with decided profit by the student, and can scarcely, under any circumstances, be made an improper use of by him. Even those who have passed through their novitiate, and already entered upon the practice of their profession, may derive from a perusal of it both pleasure and instruction. The work contains, in fact, a greater amount of most excellent matter than its size would, at first sight, seem to indicate. Much, however, as we are pleased with the general plan and execution of these memoranda medica, we could have desired, in respect to some few of them, greater fullness—more of those aphoristic propositions in which the author has succeeded so admirably in condensing such an amount of valuable matter without in the slightest degree impairing its clearness. In relation also to certain points, in connection more especially with the department of general pathology, which are entirely overlooked by Dr. Hartshorne, we could have wished for the insertion of a memorandum or two. We say this in no fault-finding spirit. It is from our high appreciation of the excellence of what the author has done, that we feel a regret that he has not done more.

We may be permitted to remark that we doubt the correctness of the rendering which Dr. Hartshorne has given to the sentence from Hippocrates, which he has placed on his title-page as a motto. Is not, we would respectfully ask, its true meaning "to *do good* rather than *merely not to injure?*" Implying, in other words, that it is the duty of the physician positively to benefit his patient rather than simply to avoid doing him harm. That the Greek ἢ has often the sense of "rather than," is a fact of which every scholar is perfectly aware.

It is to be hoped that Dr. Hartshorne may receive sufficient encouragement, by the favorable reception of the volume under notice, to induce him to carry out his intention of preparing parallel memoranda upon the subjects of nosography, special pathology, and the practice of medicine.

ART. VIII.—*Du Traitement par L'Urêthrotomie Interne des Rétrécissiments Organiques de l'Urèthre, Réfractaires aux Moyens Ordinaires. Thèse pour Le Doctorat en Médecine.* Par FELIX-EUGENE DUPIERRIS, M.D. 4to., pp. 78. Paris: Rignoux, 1860.

On the Treatment of Intractable Strictures of the Urethra by Internal Incisions. Thesis for the Degree of Doctor of Medicine. By FELIX-EUGENE DUPIERRIS, M.D.

IN this inaugural thesis, presented to the Academy of Medicine of Paris, and published by its authority, Dr. Dupierris has succeeded in collecting from every quarter a sufficient amount of information on the treatment of obstinate urethral strictures by urethrotomy, to form a very creditable brochure. After having treated of the causes, pathological anatomy, situation, structure, and different varieties of intractable strictures, the author occupies the greater portion of the work with the consideration of internal division, not neglecting to mention the methods of treatment by simple and forced dilatation, cauterization, excision, and by the perineal section.

The brochure gives promise of early usefulness and distinction; and we trust that the son may earn for himself a reputation worthy that of his father, Dr. Martial Dupierris, one of our most valued collaborators. We hope the day is not distant when students of this country will emulate the ambition of their Parisian brethren, in producing inaugural dissertations, alike creditable to themselves and to their teachers.

ART. IX.—*The Pocket Anatomist, being a Complete Description of the Anatomy of the Human Body. For the Use of Students.* By M. W. HILLES, formerly Lecturer on Anatomy and Physiology at the Westminster Hospital School of Medicine. 12mo., pp. 263. Philadelphia: Lindsay & Blakiston, 1860.

MR. HILLES, who has for some time been favorably known to us by his excellent little work on Regional Anatomy, issued in London, in 1857, now offers for the use of students the most complete book of the kind we have ever seen. It is not intended to take the place of the larger and more finished text-books, but the author's aim has been to furnish a brief description of the different tissues and organs of the human body. As stated in the preface, the work is based upon a treatise known to the profession as *Savage's Anatomist,* and from its enlarged and altered form, it should be considered rather as a new work than as a new edition of a former treatise. It is vastly superior, in every respect, to the Anatomical Remembrancer, so much used in this country, and we can, therefore, safely recommend it to the attention of students.

ART. X.—*The Physician's Visiting List, Diary, and Book of Engagements, for* 1861. Philadelphia: Lindsay & Blakiston.

The Physician's Diary for 1861. Buffalo: Breed, Butler & Co.

The Physician's Hand-Book of Practice for 1861. By WILLIAM ELMER, M.D. pp. 200. New York: W. A. Townsend & Co.

THE Physician's Visiting List, issued by Messrs. Lindsay & Blakiston, has been so long before the profession that it is needless to say that it is very useful and convenient to the practitioner. The contents of the book are an almanac; table of signs; Hall's ready method; poisons, and their antidotes; table for calculating the periods of utero-gestation; blank leaves for visiting lists; memoranda; addresses of patients and nurses; obstetric and vaccination engagements; and general memoranda.

The scope of the annual of Dr. Elmer is larger than that of the above work, for, in addition to the contents of the former publication, it comprises a classification of diseases; eruptive and other fevers; diseases of the skin and the other organs of the body; medicinal weights and measures; abbreviation of the medicinal properties of remedies; list of remedial agents; list of incompatibles; medicated baths; writing of prescriptions; and a record of practice and treatment.

The Buffalo publication is very much on the same plan as the work issued in this city, although its contents are not so full. Any of these annuals will prove serviceable to the practitioner.

ART. XI.—*Archiv für Klinishe Chirurgie.* Erster Band, erstes Heft. Mit 4 Tafeln Abbildungen. Berlin, 1860.

THE journal, the title of which is here given, is edited by Dr. Langenbeck, the distinguished Professor of Surgery in the University of Berlin, with the assistance of Dr. Billroth, Professor of Surgery at Zürich, and Dr. Gurlt, Lecturer on Surgery at Berlin. The volume just issued is the first number of the work, being a portly octavo of nearly three hundred pages, illustrated with four beautiful lithographic plates. The gentlemen engaged in conducting it are all well known for their scientific attainment and large experience, and we have therefore every assurance that it will not have a mere ephemeral existence, but that it is destined to be long-lived, and to take at once a high rank among the leading periodicals of the day. So far as we know, it is the only journal in the world devoted exclusively to clinical surgery.

The principal portion of the volume is occupied with essays on Injuries of the Veins and Tumors of the Sheaths of the Vessels, by Dr. Langenbeck; on Fibroid and Sarcomatous Tumors, by Dr. Sanftleben; and on Resection in the Hip-joint, by Dr. Fock. In addition to these, there are interesting papers on the operation for hare-lip, osteotomy of the tubular bones, ozæna cured by creosote, deformity of the foot, and urinary calculi external to the urinary passages.

The "Archives of Clinical Surgery" will, we trust, meet with an extensive circulation in this country, where the German language is now so much studied by physicians. The work is issued quarterly, and is printed upon excellent paper, with a remarkably clear Roman type; the whole presenting a highly creditable appearance. We wish our new contemporary a long and prosperous career.

ART. XII.—*Lives of Eminent American Physicians and Surgeons of the Nineteenth Century.* Edited by S. D. GROSS, M.D., etc., etc. 8vo., pp. 836. Lindsay & Blakiston: Philadelphia, 1861.

THIS long-promised work has at length been issued from the press, in a style highly creditable to all concerned. It comprises thirty-two memoirs of distinguished physicians and surgeons, and will, we feel satisfied, be read with the deepest interest, not only by medical men, but by lawyers, divines, and the more intelligent portion of the public generally. Such a work has long been needed, and it cannot fail to be hailed by the profession throughout the country as a valuable addition to its literature. As a more extended notice of it will appear in a future number of the REVIEW, we content ourselves at present with announcing the fact of its publication, and the expression of our conviction that it should be in the library of every intelligent physician.

Original Communications.

ART. I.—*Brunonianism, Toddism, and other Isms.* A paper read before the Philadelphia County Medical Society, November, 14th, 1860. By SAMUEL D. GROSS, M.D., Professor of Surgery in the Jefferson Medical College.

THE revolutions in medicine have been almost as numerous as the revolutions of empires, and hardly, if indeed any, less disastrous in their effects upon human life. The checkered arch which spans its horizon has everywhere inscribed upon it, in legible characters, the words change, change, change. Every age has had its medical absurdities and inconsistencies; and, judging from the tendencies of our own, it is evident that the times are sadly out of joint in these particulars. As fast as one delusion, enslaving the professional mind, disappears, another springs up to take its place; and thus it probably ever will be, for fickleness and instability are written upon all human things. God and truth alone are immutable.

Bacon was a firm believer in charms and amulets; Martin Luther thought there was great efficacy in toads; Boyle held that the thigh-bone of an executed criminal was a specific for dysentery; Berkeley humbugged his countrymen with the virtues of tar-water; and, in comparatively recent times, Perkins set the world agog with his metallic tractors. Mesmerism was rampant in France in the latter part of the last century, and after having been almost forgotten, reappeared in this country, in all its pristine vigor, not more than twenty years ago, under the fostering care of more than one *eminent* professor. Clairvoyance, too, has had its day; while Homœopathy, Chrono-Thermalism, Thompsonianism, Hydropathy, and other kindred delusions are stalking through the land, entrapping the credulous and unwary, and consigning thousands of human beings annually to a premature grave. In Germany and Switzerland the whey and grape cures are at this moment all the rage in the treatment of chronic diseases. What the next humbug will be, time will soon determine.

To a person of a calm, sober, and reflecting mind, all this does not appear strange. Such a result is perfectly natural; a necessary consequence of man's credulity, weakness, and craftiness; of the imperfections of his observing and reasoning faculties. Diversity of thought and action is one of the great prerogatives of our nature. The saddest calamity that could befall the human race would be that in which all men should regard objects from one common stand-point. All efficient progress would instantly cease. The mental world would sink into inertia. Providence has wisely ordained that there should be conflicts of sentiment and varieties of pursuit. It is only when these diversities assume a monstrous form that they are liable to become objects of mischief, involving the best and dearests interests of society. Medical science has largely participated in these blessings and these evils; it has always had its ebbs and flows, its currents and counter-currents. The greatest divergence of opinion still prevails concerning the pathology and treatment even of many of the more common diseases. The profession is full of skeptics. Is it surprising, then, that some master-spirit should occasionally rise up to startle the world, and to dazzle it with the rays of his genius, uprooting, like the storm that sweeps over the earth, and demolishes nature's fairest works, all our preconceived ideas of pathology, and thus unfitting us for the adoption of a rational therapeutics? Such an occurrence cannot, in the very nature of things, be expected to be infrequent; and all experience has shown that the lesser lights of the profession are ever ready to gather round the new luminary as moths gather round the flame of a candle. With little or no thought of consequences, with no pains to investigate the claims of the new candidate to public favor, and dead to the promptings of common sense, they fall an easy prey to every new doctrine, or new mode of practice, however visionary and absurd. Novelty is with them a new species of existence, a kind of hysterical illusion, which they hail as a pleasant change, because it is always followed by excitement, so necessary to their happiness. Their motto, forthwith, is "jacta est alea," and they accordingly enroll themselves under the new banner with all the ardor and enthusiasm of patriots, if not martyrs.

The very instability, then, of medical science and doctrine is often, if indeed not generally, attended with salutary results. The inquiry which is sure to follow in its wake seldom fails to put the erring mind again into its proper track. Like a drunken peasant on horseback, to use one of Luther's similes, it may now be on this side of the saddle, and now on the other, but it will be sure, in the end, to recover its equilibrium. The atmosphere of medicine, like that of law, politics, and even divinity itself, requires occasional ventilation.

If there were no changes in medical doctrine and practice, there certainly could not be any healthful professional progress; the science would become stagnant, and be incessantly in danger of relapsing into barbarism. There is, then, I repeat, something salutary in these revolutions, something positively useful; and yet it cannot, on the other hand, be denied that they often carry with them much that is absolutely hurtful, both as it respects the interest of medical science and the good of the human race.

Considering the frequency of these revolutions, their pervasive influence, and the vastness of their importance not only to the profession, but to mankind at large, it is surprising that there is not in the English language a solitary work in which they are comprehensively and philosophically discussed. Nowhere are they brought out in bold and prominent relief. To the scholar of leisure, and of the requisite clinical experience, there is, in my opinion, no field, the thorough and successful exploration of which holds out so many inducements for exertion; so much prospect of reimbursement in fame and usefulness. To do full justice to the enterprise, the individual should bring to it the possession of vast learning, a discriminating mind, and untiring industry, united with an ample practical acquaintance with medicine and the collateral sciences, and an ardent love of his profession. It should be the work of a long lifetime; anything short of this would only end in disappointment. The study would demand a thorough knowledge of contemporaneous history, an extensive acquaintance with the different sects of philosophy, and a profound inquiry into the character of disease as it has prevailed in different ages, and in different parts of the globe, with an account of the modifying influences of climate, soil, society, and occupation.

It requires no prophetic eye, no special forecast, to discover that we are on the very verge of one of the most fearful and wide-spread revolutions in medicine that the world has ever witnessed; another of those astounding changes whose name is already legion, and which, whether for good or for evil, is destined to convulse the profession, and to exert a most powerful influence upon the practice of the healing art. If this statement be true, as the sequel will show it is, is it not proper that we should pause and inquire, "Watchman, what of the night?" Is it right that we should calmly fold our arms and be silent spectators of the scenes around us, without taking an active interest in them? There is an impending crisis in our profession, and it is the solemn duty of every medical practitioner to meet this crisis in a manly and philosophical spirit. The question is not one of an ephemeral character, or one of unconcern; its solution is of the deepest moment, involving the health, the lives, and the happiness of millions of human beings, born and unborn. Its correct solution is of far greater consequence, in its present and remote bearings on the civilized world, than any political question that has been agitated during the last half century. If this crisis cannot be averted, its crushing effects may be incomparably greater than those of the bloodiest war, or of the most unrelenting epidemic that has for ages spread its desolating mantle over the earth.

The tendency on the part of the medical profession, both in Great Britain and in this country, at the present moment, is the abandonment of all active depletory measures and the employment of stimulating ones, upon the assumption that there has either been a material change in the type of disease, or that there is in all inflammatory affections a peculiar toxic state of the blood, rendering mankind incapable of bearing the same active treatment as formerly. So deeply rooted has this opinion become that many practitioners have already entirely discarded the use of the lancet, purgatives, tartar emetic, and other depressants. Some of them even coincide with the late Dr. Todd, of London, that leeches can no longer be applied with safety.

In order to do anything like justice to this subject, it is necessary to inquire, first, whether there has really been any change in the type of disease, as has been so confidently asserted by some of the advocates of this doctrine; and, secondly, whether there is any foundation for the belief that people are less capable now than formerly of resisting the effects of active depletory remedies. I shall endeavor to show, during the progress of the discussion, that both these views are untrue; or, what is the same thing, that they have had their origin in misconception and superficial observation, if not in a willful disposition to misrepresent and distort facts, in order to render them subservient to the creation of a new theory in medicine, and the establishment of a temporary notoriety.

The idea of the exclusive employment of stimulants in the treatment of inflammatory affections is not new. To go no further back than the last century, it will be found that it enjoyed a remarkable popularity, not only in England, but also in certain parts of the Continent of Europe, especially in Italy and Germany. Under the name of the Brunonian system, it exercised an extensive sway, for nearly twenty-five years, over the minds of many otherwise enlightened practitioners, whose enthusiasm seemed to have been carried away by it to the utmost stretch of the imagination. Many of them, indeed, supposed that they had actually discovered the philosopher's stone, in regard to the treatment of disease, and they openly thanked God that they had been made the humble recipients of this great blessing. John Brown, the author of this practice, was almost deified. He pretended to have made a stupendous discovery, founded mainly upon reflection and his own personal suffering. All diseases were regarded by him as sthenic and asthenic; this was his only classification, and the treatment which he erected upon it was essentially stimulant or supporting.

The biography of this remarkable personage deserves brief notice in connection with his celebrated doctrine, inasmuch as it will serve to bring out the latter in somewhat bolder relief, and show how easy it is for a man of genius to become the founder of a new sect.

John Brown was descended from poor, illiterate parents, his father having been an ordinary day-laborer. He was born at Bunckle, in Berwickshire, Scotland, about 1736. At an early age he was bound as an apprentice to a weaver, but having no taste for the loom he soon revolted and left his master. He was next sent to the grammar school at Dunse, where he pursued his studies with so much ardor and success as to be universally regarded as a prodigy. In the summer he worked in the field in order that he might thus secure the means of improving his mind, which was now the chief object of his ambition. After struggling on in this manner for some years, he became an assistant in the school, and finally resolved to enter the ministry, attaching himself to the sect of Seceders. His habits at this time are described as having been most regular, and so extraordinary was his piety that it was supposed he would become a great and shining light in the church. By degrees, however, he relaxed in religious enthusiasm, and, uniting himself with the Scotch establishment which he had originally so much detested, he soon renounced divinity altogether. He remained at the grammar school till near the age of twenty, earning great reputation as an accomplished scholar, being especially distinguished for his uncommon proficiency in Latin, which he read, spoke, and wrote with great fluency, if not positive elegance. Determined to turn his knowledge to advantage, he settled at Edinburgh as a teacher of Latin, and as a translator of English into Latin theses; in other words, John Brown became what was then and is still known as a *grinder*. He also attended the medical lectures in the University; and in order to support himself and his family—for he was now married—he opened a boarding-house for medical students. In time he became intimate with Cullen, who was so fascinated with his talents and attainments that he was induced to employ him as a private tutor in his family, and at length permitted him to give an occasional evening lecture, in which he had the assistance of the notes of the professor's morning discourse. The friendship, however, which had thus sprung up, was of short duration; Brown's boarding-house scheme failed to afford him the means of a livelihood, and being disappointed in obtaining the chair of Theoretical Medicine in the University, in his application for which he had largely calculated on the influence of Cullen, an open and permanent rupture took place between them, followed by a determined enmity on the part of the protegé toward all the medical professors of Edinburgh.

Thus thrown again upon his own resources, he lost no time in delivering a course of opposition lectures, in which he ridiculed the teachings of Cullen, and gradually developed his new doctrine, finally embodying its principles in his "Elements of Medicine," published in 1780. His time was now chiefly spent in expounding his new theory, and in carousing with his dissolute companions, of whom he had not a few, both in and out of the profession. He was frequently intoxicated, and, neglecting his business, he became so reduced in circumstances as to be committed to prison for debt, where, such were his powers of fascination, his pupils continued to attend his lectures. Disgusted with Edinburgh—for he had now neither friends, nor practice, nor money—he quit Scotland and settled in London, in the hope that a change of residence might bring with it a change of fortune. But, alas! no such result ensued. His career in the English metropolis was as short as it was inglorious. Worn out by intemperance, chagrin, and disappointment, he died, in utter poverty and obscurity, in 1788, at the age of fifty-two, of apoplexy, brought on by an over-dose of laudanum, taken, as some have supposed, for the purpose of self-destruction.

John Brown was a firm and enthusiastic believer in the truth and value of his own doctrine. Having early become a victim to gout, he daily took large quantities of alcohol and laudanum to relieve his suffering, and the consequence was that he was seldom entirely sober. On one occasion, in order to afford a practical illustration of his views, he invited, as he himself declares, some of his most zealous and intelligent disciples to dinner. Before they sat down to the table, he hobbled about the room with great difficulty, his leg being swelled and so excessively painful that he was unable to put it upon the floor; but after the bottle had been freely circulated, and the master had become partially intoxicated, he recovered the use of the parts so completely as to move them with the greatest facility. When engaged in lecturing, he generally had at hand a bottle of whisky and a phial of laudanum, taking a glass of the former and from forty to fifty drops of the latter whenever he felt at all languid, repeating the dose perhaps not less than four or five times during the exercise. "Between the effects of these stimulants," says Dr. Beddoes, one of his biographers and most enthusiastic admirers, "and voluntary exertion, he soon waxed warm, and by degrees his imagination was exalted into frenzy."

Such is a brief sketch of the life and character of John Brown, the founder of the so-called "Brunonian system of medicine." That he was a man of genius and possessed of a vivid imagination, with a superior classical education, his career abundantly attests. That he was lax in his principles and debauched in his habits is equally true. Moreover, he was vain, ambitious, unscrupulous, and not always truthful. One of his greatest sins was ingratitude toward Cullen, who, notwithstanding Brown's assertion to the contrary, was for many years his sincere and devoted friend, and who spared no pains to advance his interests so long as he could without compromising his own dignity. "But," to quote the language of Beddoes, "friendships originating in protection are very prone to terminate in enmity, unless difference in rank and pursuit totally precludes competition; and it is well known that the friendship in question was far from permanent."

The opinions of Brown exerted so wide a sway in Great Britain as to affect, for a time, the whole practice of medicine. In Italy his works were translated by the celebrated Rasori, with notes and annotations; and so great was their influence in that country that there was hardly an intelligent pupil who did not openly avow himself as a Brunonian. The "doctrine" also speedily found its way into Germany and France, in both of which, but especially the former, it made numerous converts, and long maintained its hold upon the profession. In a number of the continental universities its principles were formally expounded by the professors. In Germany, writes an anonymous author, Brown was hailed as the medical Luther, and so great were the dissensions among the pupils of some of the leading schools in regard to the claims of the Northern Light, that it was not uncommon for them to come to blows. At Göttingen the Brunonians were so rebellious as to require the authority of the military to keep them in subjection. Of the extent to which the new doctrine had enslaved some of the German practitioners, a correct idea may be formed when it is stated that, at the hospital at Bamberg, the attending physician, Dr. Marcus, a man of eminence, considered himself justified in distributing, as an average allowance, among nearly five hundred patients affected with various kinds of diseases, a drachm of opium, with three times that quantity of camphor and a pound of alcohol, together with numerous other stimulants.* This was at the close of the last century. In 1782, two years after the publication of the "Elements,"

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* Edinburgh Medical and Surgical Journal, September, 1860, p. 259.

Brunonianism had reached its culminating point at Edinburgh. Poland, Russia, and Spain also suffered from the infection. In time it penetrated even into India, its most able and enthusiastic advocates in that country being Dr. William Yates and Dr. Charles Maclean, of the General Hospital at Calcutta. These physicians gave an able and lucid exposition of the new doctrine in a short tract, published in the latter part of the last century, under the title of "A View of the Science of Life on the Principles established in the Elements of Medicine, by the late celebrated John Brown, M.D."

In the United States the works of the founder of the Brunonian system were republished at Portsmouth, New Hampshire, in 1803, and were extensively read by the physicians of that period, not a few of whom became its converts, either wholly or in part.

The fundamental propositions of John Brown are few and simple. "Life," he says, "is a forced state;" and he calls the quality or principle on which its phenomena depend excitability. This excitability, of which a certain amount is allotted to every animated being, is seated in the medullary portion of the nerves and in the muscles, and varies not only in different classes of animals, but in the same animal at different times. When most intense, the animal is most vivacious or susceptible of the action of exciting powers, as the various external impressions—heat, air, food, wine, poisons, contagion, the blood, and secreted fluids—or muscular exertion, the passions and mental emotions. The excitement thus occasioned may be too great, too small, or in just measure. When too great, the excitability becomes defective, and weakness is induced, called indirect debility; when too small, as when the exciting powers or stimulants are withheld, direct debility is the result, because the excitability then exists in excess. Every power that acts on the living frame is a stimulant, and if this exciting power is withdrawn, death ensues as certainly as when the excitability is gone. When the excitement is natural, or in just proportion, health is the result. All diseases, according to this system, are sthenic or asthenic; that is, they are attended either with excitement or with exhaustion.*

The stimulant treatment of John Brown was, as has already been stated, essentially based upon the relief which it afforded him in his arthritic attacks. His first seizure occurred when he was in the thirty-sixth year of his age, in consequence, as he alleges, of abstemious living during the previous six months. Subsequently he noticed that he was peculiarly prone to this kind of suffering whenever he relaxed in his dietetic habits, until at length he became satisfied that the best remedies for his complaint were nutritious food and alcoholic stimulants. These facts are all clearly stated in the preface to the original work, the Elementa Medicinæ. "The author of this work," says he, "has spent above twenty years in learning, teaching, and diligently scrutinizing every part of medicine. The first five passed away in hearing others, in studying what he had heard, implicitly believing it, and entering upon the possession as a rich and valuable inheritance. His employment, the next five years, was to explain more clearly the several particulars, to refine and give them a nicer polish. During the five following years, nothing having succeeded to his satisfaction, he grew indifferent to the subject; and, with many eminent men, and with the very vulgar, began to deplore the healing art as altogether uncertain and incomprehensible. All this time passed away without the acquisition of any advantage; without that which of all things is the most agreeable to the mind, the light of truth; and so great and precious a portion of the short and perishable life of man was totally lost. He was, at this period, in the situation of a traveler in an unknown country, who, after losing every trace of his way, wanders in the shades of night; nor was it till between the fifteenth and twentieth year of his studies that a faint gleam of light, like the first break of day, dawned upon him."

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* Beddoes's edition of Brown's Elements of Medicine, p. lxii. Portsmouth, N. H., 1803.

It is hardly necessary to say that the doctrines of Bennett, Todd, and others, in regard to the treatment of inflammation by stimulants, now attracting so much attention, are essentially the tenets of John Brown, either bodily, or under certain modifications. Mr. Bennett is not, it is true, like Alison, a believer in a change in the type of disease, but his treatment is essentially supporting in almost every form and stage of disease; and a similar practice is inculcated, only more pointedly and with less reservation, by the late Dr. Todd, who, however, avowedly discards the idea of sthenic and asthenic affections insisted upon by Brown. But Brown, although he divided all maladies into these two great classes, was rarely, if ever, known to employ the lancet and other depressants; on the contrary, his practice was essentially stimulant; it was always so in his own person, and in the few cases which were under his charge at Edinburgh; for, be it remembered, John Brown had hardly any professional business, and he was known in the medical circles of the Scottish metropolis merely as a theorist. If I am correct in my conclusions in regard to the Brunonian practice, it follows, as a necessary consequence, that it was essentially similar to the practice so strenuously inculcated at the present day; it certainly amounts to the same thing, only that the modern school carry, if possible, the stimulant treatment still farther than the Brunonians did.

Taking Dr. Todd as a type of the new school, let us briefly inquire into the character of his pathology and therapeutics, as set forth in his work on acute diseases, published only a few days before his lamented death, in 1859.

An attentive perusal of this treatise conclusively shows that he was a thorough and uncompromising humoralist. His pathology was based essentially upon the assumed existence of a poison—*materies morbi*—in the blood, for the elimination of which he employed sustaining measures in all acute inflammations from the very commencement of the attack, hoping thereby to anticipate and prevent depression of the vital powers. Starting with this fundamental doctrine, he contends that all diseases are necessarily asthenic, inasmuch as they always cause undue waste of tissue; that there is a tendency in most, if not in all, diseases to a natural cure; and that the treatment of the physician can be of use only in so far as it may assist in neutralizing the poison upon whose presence and operation in the system diseases depend; in other words, that our drugs or remedies are mere antidotes, incapable of exerting any other influence over morbid action. At the head of the list of stimulants he places alcohol, which, if we are to believe him, not only increases the animal temperature and strengthens the heart, but acts as an aliment, nourishing and sustaining the nervous system in a manner and in a degree superior to those of any other kind of food. One of the most important effects ascribed to it by Dr. Todd, in the treatment of all acute inflammatory diseases attended with exhaustion and high fever, is the prevention or mitigation of delirium. With this object, he enjoins it to be given frequently, and in such quantities as experience has shown can be most easily assimilated, a good average dose being from two drachms to half an ounce, diluted with water, every hour, or even every half hour. He also insists upon its early exhibition under such circumstances, and of its action being aided by nutritious food and suitable anodynes, to allay pain, induce sleep, and tranquilize the affected structures.

Such, in few words, is Toddism. In what essential respects does it differ from Brunonianism? Not in a single one, so far as treatment is concerned. The whisky juts out equally prominently in both systems, although Dr. Todd doubtless administered it with more judgment than his ingenious but unfortunate prototype.

I come now to consider very briefly the two great questions proposed for discussion in this paper, namely: First, is there really, as has of late been so frequently alleged, a change in the type of disease? and secondly, is it a fact that people are no longer able to bear the same depletory measures, when laboring under inflammation, as formerly?

In regard to the first of these questions, I unhesitatingly reply in the negative. I have certainly not seen anything, in a practice of upwards of thirty years, to warrant such an opinion. To me diseases appear as they did when I entered upon the study of medicine. I am speaking now more especially of inflammatory affections, whether idiopathic or traumatic, as they ordinarily manifest themselves to us in the daily routine of practice, and not of epidemics, which, as is well known, always wear a peculiar livery in consonance with the peculiar nature of their exciting causes. These diseases, comprising erysipelas, typhoid fever, scarlatina, measles, small-pox, cholera, yellow fever, pneumonia, and other kindred affections, are seldom precisely alike during any two successive visitations. They are subject to constant fluctuations, arising without any assignable cause, leading to remarkable variations in their mortality, and requiring essential modifications of treatment. But there is no change of type, properly so called, even here. Whoever will take the trouble to inquire into the history of epidemics, as they have prevailed in different ages and in different countries, cannot fail to be impressed with the truth of this remark. To refer only to one of these epidemics, scarlet fever, who does not know that it is at one time so violent as to decimate an entire community, or destroy entire families, while at another it is so slight as to pass almost harmlessly over an entire country?

But if we take the ordinary inflammatory diseases, idiopathic and traumatic, of the human race, those which are liable to assail all persons, of whatever age, rank, or occupation, the only changes to which they are liable are such as are dependent upon individual peculiarities, growing out of their mode of living; that is, the nature of their food and drink, their residence, occupation, and social relations, and the state of their health at the time of their seizure, more particularly the state of the blood, the secretions, and the digestive apparatus. All these circumstances modify disease, and consequently demand a corresponding change of treatment. But in point of fact the morbid action is essentially the same; it may vary in degree but not in character. Its type, its essence, is the same. The blood-vessels at the seat of the disease are in the same condition; the deposits are of the same nature; the vessels may be more distended or less distended, more brittle or less brittle; the serum may be more abundant in one case than in another; the lymph may be plastic or aplastic; the pus may be laudable, sanguinolent, or fibrinous. These are mere individual differences, dependent upon accidental circumstances and not upon any changes in the type of disease. A furuncle, a carbuncle, an erysipelas, a whitlow, a conjunctivitis, exhibit the same characters, both outwardly and inwardly, now that they did ages ago; and if this be true of the external inflammations, may it not be justly inferred that it is true also of the internal, as pneumonia, pleurisy, hepatitis, cystitis, gout, and rheumatism? I can myself discover no differences between the inflammations which supervene upon wounds, sprains, contusions, fractures, and dislocations of the present day and those which were wont to meet my eye from these causes in my early professional life, save, of course, what are due to individual peculiarities. Their type is essentially the same now as then. Recovery and death are governed in both forms of these inflammations—the idiopathic and the traumatic—precisely by the same laws. The same causes which were in operation in producing ordinary inflammation thirty years ago, are in operation now, and the results must therefore be similar. Our habits and modes of life, our food and drink, our emotions and passions, are the same to-day as yesterday. The same sun and moon and stars afford us light and heat; we walk upon the same earth; we breathe the same air. Nature has not been upheaved by any unusual convulsions; the laws of God move on in their accustomed order.

There is no evidence, certainly not on this side of the Atlantic, of any serious physical degeneracy of the race in any walk or pursuit of life. The gardener, the plowman, and the dairymaid are as hale and robust as they have ever been. The blacksmith's brawny arm makes as much noise with the hammer upon the anvil as in the days of his ancestors. The carpenter, the mason, and the drayman have shown no diminution of manly vigor. The soldier wields the sword and musket with as much ease as he ever has; and the mariner is as justly entitled now to the appellation of "hardy" as he was at the battle of Aboukir, Trafalgar, or Lake Erie. Man's weight and stature, muscular development, and the quantity of his blood, have undergone no perceptible change within the last thirty years.

From all these facts, we infer that ordinary diseases are incapable of undergoing any cyclical changes of type, and that what have been regarded as such have had their origin in the mind of the physician and not in the body of the patient. In short, that all such opinions are imaginary and not real.

Brunonianism was essentially based upon the assumed inability of the people to bear depletory measures when laboring under inflammation; and yet it must strike every one as a most singular coincidence that, while the practitioners in many parts of Europe were pouring stimulants by the wholesale into the stomachs of their patients, Rush of Philadelphia was indulging in the most copious abstractions of blood, even during the epidemic yellow fever of 1793 and 1797, and busily engaged in laying the foundation of the bleeding school, whose influence was destined to last the better part of the third of a century. Surely no one will contend that this difference in the practice of the two countries at that period depended upon any material difference in the constitution of the people, or change in the type of disease.

The great error of the Todd school is the assumption that all diseases are due to a toxic condition of the blood. That some poison or other does exist in the system in certain affections, as erysipelas, scarlatina, pyæmia, and typhoid fever, is highly probable; at all events, such an opinion is now very common among physicians; but it is surprising that a man of the mental acumen of Dr. Todd should have made a general application of such a doctrine, and thence drawn the conclusion that all diseases require a stimulating plan of treatment in every stage of their progress.

Entertaining these convictions, I need hardly say that the idea that all inflammatory diseases should be treated with stimulants, has not only no foundation in truth, but is at direct variance with the best interests of the sick, and the reputation of the physician, considered as an enlightened, honest, and conscientious man. It can be clearly shown that such an exclusive system of medication is based either upon superficial observation and hasty generalization, or, what is worse and more reprehensible, upon a desire, on the part of those who have given currency to it, to become the founders of a new sect of medicine, with a view of gratifying selfish and ambitious purposes. It is difficult to conceive how any physician, enlightened by clinical experience, could bring himself by any process of reasoning or of logic to such a conclusion. If the opinion were a mere abstraction, it might be regarded as an ingenious quibble, calculated to excite our curiosity, perhaps our risibility; but it is very different when it is presented for our adoption at the bedside. It then assumes a more imposing attitude, and exhibits itself in all its naked deformity, as a monster ready to ingulf whoever is credulous enough to put his trust in the skill of the physician.

The only rational mode of treating disease is to individualize every case and to permit it to make its own laws, these laws having reference to the nature of the exciting cause, the peculiar structure involved, the period that has elapsed since the commencement of the attack, and, lastly, though not least, the state of the system immediately preceding the outbreak of the malady, as well as at the time of the physician's first visit. It is only by such considerations as these that the practitioner can hope to do full justice to his patient, and to preserve the honor and dignity of Hippocratic medicine. He must not view disease through the murky eye of prejudice, or approach the bedside with his mind filled with preconceived notions of debility or plethora; but he should so examine the case as to be able to give a just and satisfactory reason for the faith that is in him. If the stimulant school see nothing but reduced action or depressed vital power, it proves pretty conclusively one of three things, namely: either that they are incapable of making accurate observation, that they are blinded by prejudice, or that they have to deal with a class of patients whose habits and conditions are such as to forbid the employment of any other method of cure.

But we can certainly not suppose that the great advocates of the stimulant mode of treatment are not accurate observers; they are men of too much ability, mental discipline, and sober judgment to lend coloring to such an idea. Shall we accuse them of prejudice? All men are more or less under the influence of this passion, and it may, therefore, be assumed that the wisest and best of the advocates of this doctrine are not altogether exempt from it; nevertheless, no one could justly ascribe to them such a sin. What, then, is the source of this practice? Discarding these two conjectures as untenable, are we to conclude that these pathologists have no other than broken-down, worn-out, or decrepit patients, the residents of crowded cities, and the inmates of foul, ill-ventilated hospitals? Here, again, our proof is at fault; for while it may be supposed that both Todd and Bennett saw mostly persons of this description, it would be absurd to imagine that they had not also sometimes met with a stout, robust one, capable of bearing almost any amount of depletion and starvation. Has not Dr. Bennett himself afforded a complete refutation of this supposition in his own case of pneumonia, for the relief of which he was so copiously bled by one of his colleagues? Is it the stage of the disease that has produced this change of sentiment? Here, again, there is nothing positive, although it may reasonably be inferred that these practitioners are not always called in after the disease has committed such ravages as to admit of relief only by supporting measures.

It is well known that fashion has its influence in our art as in everything else. An ingenious tailor or mantua-maker often revolutionizes, by a mere stroke of the scissors or the addition of a trifling embellishment, the costume of an entire nation. It has already been seen how a dissolute doctor, who for many years hardly ever drew a sober breath, and who probably never had a hundred patients in his life, became the founder of a new sect in medicine, which maintained its sway for nearly a quarter of a century, its sole basis being the relief which he experienced in his own person from alcoholic potations and laudanum, whenever he suffered from an attack of gout, to which, for many years, he was a victim. Unity of disease and the lancet were the great weapons in the hands of our illustrious countryman, Rush. Purgatives were all the fashion in the days of Hamilton. Dyspepsia was the absorbing complaint with Abernethy and Phillip. In the time of Faithorne and Johnson every body had disease of the liver; and it is within the recollection of the elder members of the profession what an influence the doctrine of spinal irritation exercised upon the minds of practitioners, both in the Old World and the New, in the moulding of their views of pathology and practice. Broussaisism strutted for awhile triumphantly upon the stage on the basis of gastro-enteritis, leeches, ptisans, and gum-water. Cookeism rejoiced in an obstructed portal circulation, in vitiated bile, and in the R. A. C. pill, as it was called, a compound of rhubarb, aloes, and calomel. With some everything is a change in the type of disease; and both with them and Todd and John Brown, the only safety for the patients is in alcohol and other kindred remedies. Bleed the patient and he dies; purge him actively, and if he is not killed outright, his recovery will be greatly retarded, and his constitution, perhaps, irreparably damaged. Just now, the cellular pathology of Virchow is coming into notice with all the authority and prestige of an eminent foreign teacher, and it is not difficult to foresee to what extent it is destined to enslave the medical mind of this and other countries.

Although most medical men, as well as the community at large, view blood-letting at the present day with a kind of holy horror, the remedy has been employed, millions upon millions of times, with the greatest benefit in various inflammatory affections, from Hippocrates down to the present hour. That it has been abused is unquestionable. We can hardly reconcile with our notions of propriety the loss of two, much less of three hundred, ounces of blood in the course of a few days for the cure of an idiopathic or traumatic inflammation; and yet cases of this kind of a well-authenticated character are easily found in the annals of medicine and surgery. Dr. Francis, of New York, distinguished alike as a skillful physician and an accomplished scholar, is a living monument of the efficacy of this heroic treatment. In a violent attack of croup he lost, in a few days, nearly three hundred ounces of blood. Physick, in an attack of yellow fever, in 1797, was bled to the amount of one hundred and seventy-six ounces; and the practice to which he himself submitted he did not hesitate to apply to his patients in all cases attended with inordinate vascular excitement. He rarely extracted a cataract without drawing blood from the arm at least once a day, or every other day, until all danger of undue inflammation was at an end. His success in this operation was proverbial.

No practitioner at the present day would dare to bleed to anything like such an extent; and yet there could doubtless be found in every community men who would bear up well under it. But bleeding is no longer the fashion; the lancet is growing rusty in its case, and the cutler has almost ceased to manufacture it. Even the occupation of the leecher is almost gone. When I was a student in this city, it was very common in attacks of acute pleuritis to bleed a patient three or four times, and sometimes, if the suffering was very intense, perhaps even that often a day, the same orifice being repeatedly reopened for the purpose.

If we inquire into the causes of these revolutions in medical opinion, we shall find them, not in a change in the type of disease, or in an actual change in the powers of the system to withstand the effects of inflammation, but in a greatly enlarged knowledge of disease and of the virtues and application of remedies. The use of quinine and morphia is incomparably better understood now than it was thirty years ago; and as to aconite and veratrum viride, so highly esteemed at the present day in the treatment of inflammation, their antiphlogistic properties were entirely unknown until within a very recent period. Quinine has become the great remedy in all malarial maladies; opium is a powerful adjuvant in allaying pain and insuring rest both to part and system; and aconite and veratrum viride exercise so astonishing an influence in controlling arterial action as to render them special favorites with every enlightened practitioner. They have, in fact, become to be regarded as admirable substitutes for the lancet, tartar emetic, calomel, and active purgatives. Thus it is easy to perceive why blood-letting has fallen into desuetude; unmerited certainly in many cases, for, say and do what we please, there is no doubt that an early spoliative bleeding and the judicious use of the more heroic articles of the materia medica, formerly so much in vogue, will often do more in saving structure and function than any other of the popular remedies of the present day.

Practitioners are too prone to run into extremes, and to be led away by every specious theory wafted across the mind by men of genius, occupying high places, and speaking with the force of authority. Losing sight of common sense, and forgetting the teachings of experience, they are ever ready to grasp the shadow and forsake the substance. Hence the discordant views which so constantly agitate our profession, perplexing the public mind, and impairing our influence as enlightened and scientific physicians. Hence the strong hold which homœopathy, hydropathy, Thompsonianism, and other kindred delusions have taken upon the people. We constantly talk of the sins of our neighbors, but do not see the beam that is in our own eyes.

The past is pregnant with useful lessons. It teaches us, on the one hand, the futility, the utter folly and vanity, of all exclusive systems of medicine; and, on the other, the importance of being governed, in our views of pathology and practice, by common sense and chastened experience tempered by judgment, which holds fast to whatever is good and useful in our art and discards whatever is hurtful. Its motto is enlightened, unprejudiced conservatism, ever ready to enlarge its boundaries by cautious observation and induction, and resolved to avoid exclusiveism in whatever guise it may present itself.

Standing upon this elevated and philosophical platform, rational medicine avails itself of whatever is useful in mitigating and curing disease; not disdaining, on the one hand, the employment of the lancet, tartar emetic, calomel, aconite, veratrum viride, and other depressants, when it has to deal with violent inflammatory excitement attended with a sthenic state of the system; or, on the other, a recourse to stimulants, as brandy, wine, quinine, opium, and nutritious food, when the system is worn out by disease, or when the morbid action is attended with exhaustion of the vital powers.

As the practitioner grows older and wiser, an enlightened skepticism commonly takes the place of his boasted infallibility; he distrusts many of the remedies in which he was wont implicitly to confide in early life; his calmer judgment readily detects the fallacious glare of the systems of the schools, and he adopts, with doubt and hesitation, the hasty generalizations of enthusiastic and misguided innovators. Formerly he had ten remedies for every disease; now he has hardly a single one for any. Conscious of the imperfections of his art, he administers medicine with a sparing hand, carefully eschewing everything that savors of polypharmacy and heroic measures; and cherishes a warmer respect for the resources of Nature, satisfied that, while he may often be her assistant, he can never be her master. The usurpations of youth have yielded to the dictates of sound philosophy; and, although he may not be wholly free from the temptations of novelty, his mind is too strongly fortified by the lessons of experience to be easily led astray by any system, however facile or specious. The tyrant, fashion, has no longer any influence over him; he looks warily at every new doctrine, and calmly and dispassionately inquires into its merits before he permits himself to adopt it. He knows that an adherence to principles, based upon a professed study of pathology and therapeutics, constitutes the crowning glory of the physician.

The danger, then, in regard to this so-called new doctrine, is not to the old practitioner, grown wise and wary by experience, but to the young and incautious, fresh from the lecture-room, fond of novelty, and easily captivated by those "upstarts" in the profession, to whom the world is too apt, in its thoughtlessness, to accord the title of genius, however little it may be deserved. Such men seldom have so well balanced a mind or so calm and philosophical a temper as to render them fit leaders in matters of science, especially in one of such a momentous nature as that of medicine. There is usually some great defect in their mental organization, an absence of some important link, which sooner or later becomes apparent even to their most blind adherents, and which is sure ultimately to produce their downfall. They may, indeed, for a time, meteor-like, dazzle the horizon of the profession, but their reign is generally short-lived; and so it will be with Toddism, or the exfodiated stimulant treatment, so speciously paraded by its gifted author for our sanction and adoption.

The school of John Brown, which at one time counted its followers by hundreds, if not thousands, survived hardly a quarter of a century. Broussaissism had a still shorter career. Cookeism also perished in a few years. In a word, all extremeism, all exclusiveism, of whatever character, is necessarily destined to a brief existence.

Young Physic, warned by the sad experience of the past, should calmly ponder and cautiously try, before it decides to accept, in its full extent, so pernicious a doctrine. It has a duty, a most solemn and momentous duty, to perform; and its great mission to humanity will be a failure and a mockery, if it does not boldly set its face against all exclusive systems in medicine. "Soldiers!" said Napoleon, addressing his troops in Egypt, "Soldiers! from the summit of those Pyramids forty ages are looking down upon you!" "England," exclaimed Nelson, speaking to his brave mariners by signals on the eve of one of the most bloody naval engagements the world has ever witnessed, "England expects every man to do his duty." Young Physic! Hippocrates, the father of medicine, is looking down upon you through the long vista of nearly twenty-five centuries, and is beckoning to you to do your duty to your profession and to your fellow-beings.

Finally, let those who are so ready to put their trust in new systems of medicine, remember the lines of Ovid:—

> "*Nec lex est æquior ulla;*
> *Quam necis artificem arte perire sua.*"

ART. II.—*A Report on Epidemics and Endemics.* Read before the Medical Society of Southwestern New York, at its several Sessions during 1848. By O. C. GIBBS, M.D., of Frewsburg, New York.

MAN, formed from the dust of the earth, has ever shown a proclivity to return to his original element; hence, from the earliest records to the present time, disease, and pain, and death have been the common heritage of the race. The ways in which disease gains a victory over life, and death claims its victims, are multiform and various. There are affections which occur independently of all known external influences; there are others depending upon known and common causes; to both of which classes man is exposed in all countries, climates, and conditions of society. There are diseases which owe their existence to a combination of causes, perhaps at present beyond the jurisdiction of human understanding, which attack thousands of individuals at the same time, leaving sorrow, and death, and desolation in their train; there are other diseases that occur only in certain localities, or under a certain circumscribed combination of causes; and, although less direful in their results, they are of more frequent occurrence, and, consequently, none the less worthy of attentive consideration. The former of this latter division are denominated Epidemic, the latter Endemic diseases.

Some epidemic diseases have confined their ravages to the Old World altogether, never having visited the American Continent; others, though they may have originated in the jungles of India, have made fearful and repeated visitations to this country, and, at last, become naturalized on the Mexican Gulf and the Caribbean sea-coast, and in the hot and humid delta of the great Mississippi; all, with few exceptions, confine their ravages to the larger towns, or to low, damp, and filthy localities: hence we, mostly laboring in rural districts, and on the airy hills of Chautauque, 1300 feet above the level of the sea,* have really but little to fear from yellow fever, cholera, or the plague. Yet, notwithstanding our comparative exemption, I trust that we are not indifferent to aught that has connection with medical science by the close affiliation of disease and death. Few subjects have attracted greater attention, and none have excited more terror and dismay, than those terrible epidemic visitations that have occasionally decimated a nation, a continent, or a world.

In discharging the duties which are assigned to me on this occasion, I would, perhaps, act the wiser part in confining my remarks to diseases which are endemic in this locality. I propose, however, a wider field of inquiry; and should I allude to diseases which some of us perhaps have never seen, and never will, I shall do so, not to impart information in regard to them, but simply to illustrate the central idea of this paper, which is, that *all epidemic and endemic diseases have a particular climate and geographical position, and atmospheric and terrene relations.* It was, probably, Baron Humboldt who first called attention to the isothermal relations of plants. The diseases under consideration are no less bounded by certain isothermal lines, and have relation to geographico-meteorological causes. They have a certain natural geographical order and distribution, regulated by the conditions of the soil as to drainage, the climate as to temperature, the air as to humidity, density, and electrical condition.

The earliest preserved records of the human race bring us tidings of the fearful ravages of epidemics and pestilential diseases. Sacred history makes allusion to the plague "that wasteth at noonday." Homer speaks of its ravages in the Grecian army while encamped before

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* The height of Chautauque Lake.

Troy; and Sophocles gives a terrible picture of the desolation of Thebes. But these records, handed down to us through the mist of ages, are too meagre in facts and detail to serve any other than historic purpose.

THE PLAGUE.—More than 400 years before the Christian era, in the days of the Peloponesian war, the plague ravaged the populous City of Athens and the surrounding country, adding its gloomy horrors to the devastations of fire and sword of an invading army, carrying death wherever it went, and leaving little behind, save utter despair and desolation. A thousand years later, or in the sixth century of the Christian era, it ravaged the Roman Empire. For a time, it is said ten thousand persons died daily at Constantinople, and many cities of the East were nearly or quite depopulated. Gibbon estimates the number who perished in this epidemic, which lasted for several years, at between one and two millions! This unsparing devastator of the Levant made its first appearance, it is supposed, in Europe, in the year 1348. In Italy, France, and England the mortality was terrible. It has been supposed that three-fourths of the inhabitants of this region of country perished. Florence, in Italy, was nearly depopulated. Still a thousand years later, or in 1665, the plague visited London, causing a terrible mortality, and inflicting physical suffering, mental despair, moral turpitude, and fiendish disregard of the humane dictations of all the higher impulses of man's nature, of which the imagination can at present form but a faint conception. In this plague-smitten city, it has been estimated that 3000 perished in one night, and the whole mortality has been set down at 100,000. Nearly a hundred years later, or in 1720, this epidemic raged at Marseilles, on the Mediterranean sea-board of France, with a severity and mortality perhaps even greater than in London in 1665. But there is one fact that in some measure relieves this gloomy picture of death and desolation; the sick were not abandoned to their fate; medical aid, hospital regulations and religious consolation, so far as was possible under the circumstances, were secured to all sufferers. In 1816 this epidemic was very destructive in the Ottoman Empire; and as late as 1841, it raged in Syria and Erzeroum with great violence.

Mention has been made of only a few of the many visitations of this disease, but sufficient, I trust, to answer my present purpose in alluding to its geographical, atmospheric, and climatic relations. It will be seen that the endemic seat of the plague is on the eastern shores of the Mediterranean; there it has continued to rage, at uncertain intervals, from the earliest records to the present time. From thence it has spread southward along the valley of the Nile and the Red Sea, westward along the valley of the Mediterranean, and eastward along the low lands of the Black and Caspian Seas and the Persian Gulf; mostly between the parallel of latitude 25° and 45° north. "It seldom extends to the southward beyond Siout, in the valley of the Nile, or Jiddah, on the Red Sea. In Asia it prevails chiefly on the coasts of Syria, and a portion of the shores of Asia Minor, where it sometimes ascends the river valleys. In Europe it is endemic only on a part of the eastern coast of Turkey. It has never yet appeared in the southern hemisphere, nor in America."*

It is true, when the plague visited Paris and London, and even farther north, it passed beyond the geographical limits above specified; but it is highly probable that some peculiarity of season gave rise to a climatic change, analogous to that which is natural to the shores of the Mediterranean, and, consequently, not disproving the isothermal relations of the disease. It will be observed that the appearance of the plague is limited to the lower portions of the earth's surface; appearing mostly near the sea-shore, and at but a slight elevation above the surface of the ocean. Johnston, in the work above referred to, says: "When it is ravaging the lower quarters of Constantinople, the inhabitants of the higher portions of the seven hills, on which the city is built, often escape altogether; and Brayer mentions a village, situated on Mount Alem Dagh, at an elevation of about 1600 feet above the sea, where it was never known to appear, and which was resorted to as a place of refuge for the citizens; and there is a place in Malta, hitherto inaccessible to the disease, and on this account called *Safi* (pure.) It is recorded by the French physicians, that during their occupation of Cairo, the plague never reached the citadel of that city; and Clot Bey states that it, as well as the village of Loumeldik, situated at a considerable elevation, was spared during the epidemic of 1835."

Humidity in the atmosphere, and an argillaceous soil or subsoil, are other conditions in the production of the plague, to which I shall have occasion again to refer more in detail, when speaking of other epidemics. He who will take the trouble to examine the history of the various manifestations of this epidemic will be surprised to learn how uniformly it confines its ravages to cities situated on low, marshy sites, on the banks of rivers, or near the sea-shore—elevated, dry, airy, and well-drained localities are uniformly exempt from its ravages.

Having instanced a high degree of temperature, humidity of the atmosphere, and dampness of soil, as causes favorable to the production of this epidemic, I shall mention but one other, and that, perhaps, is more potent than any one to which allusion has been made, although mainly dependent upon their combined action for its existence. I mean atmospheric poisoning from the decomposing exhalations incident to an ill-ventilated, ill-drained, and over-crowded city, as well as from the noxious gases arising from animal and vegetable decomposition. The records concerning the terrible visitation of this disease at Athens, more than two thousand years ago, are in full confirmation of these statements. It is said that the winter preceding this epidemic was unusually rainy, and that the succeeding summer was unusually hot, untempered by the usual Etesian winds. It should be remembered that Athens was situated in a plain, surrounded by mountains on all sides save one, in which direction it was open to the spray and dampness of the sea, and, at that time, excepting its magnificent public buildings, consisted mostly of a collection of squalid huts and filthy streets. The terrified people from the country rushed to the city for protection from the fire and sword of the Peloponesians; and an able writer says: "Every vacant piece of ground, not excepting the sacred inclosures of the temples, was whitened with the tents of the fugitives. The towers were occupied, and the increasing throng filled up with their temporary huts the space between the long walls, and even placed casks in the recesses to accommodate those who could find no other shelter."*

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* See A. K. Johnston on the Geographical Relations of Health and Disease.

Other results could not have been expected, than that disease, under these circumstances, would work unprecedented ravages among the squalid people of an over-crowded city; hemmed in, as were the residents, by the surrounding hills, from the invigorating breezes and their healthful influences, subject to the burning heat of a tropical, summer sun, and depressed and poisoned by the humid exhalations from a saturated soil, and the effluvia incident to an over-crowded and filthy city. The same combination of causative circumstances accompanied the appearance of the plague in London, nearly two centuries ago. The army of Cromwell had just been disbanded, and the men of whom it was composed returned to London to participate in the vice and dissipation of that then dissolute city. The population of London at that time has been estimated at half a million. The city was mostly composed of wooden buildings, the streets were narrow, undrained, never cleaned, and constantly reeking with unspeakable abominations.

Sydenham says the preceding winter was extremely severe and protracted, the opening of spring was late but sudden, and the heat of summer increased steadily to an almost unbearable culmination as late as

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* See *Harper's Magazine*, vol. xiii. p. 63. I wish here to acknowledge my indebtedness to a series of articles on *Great Epidemics*, published in this magazine, from which I have drawn many of the foregoing facts. Should I, in the continuance of this report, find in that series any facts that may serve my present purpose, I shall avail myself of them without, perhaps, again acknowledging my obligation.

September. Under these circumstances, the plague seemed almost like a special providence, designed to awaken the stupid understanding of man to the fact that filthy dens and haunts of vice are ever the hotbeds of disease and death. These are by no means isolated cases. Constantinople, Florence, Marseilles, Syria, etc., each presented a combination of causes of disease in no way inferior to those which proved so destructive in Athens and London.

These facts surely indicate that the plague is not a meaningless curse, sent only to depopulate a world, but rather is a visitation, permitted by Providence, as a necessary consequence of a criminal disregard of those conditions essential to human health and welfare. They indicate plainly that man is not always, of necessity, to suffer and to want; but that, when he fulfills the demands of a high and Christian civilization, the devastations of the plague will be known only in history.

YELLOW FEVER.—The next epidemic disease which I propose to discuss, is yellow fever; and, like the plague, it hides its origin in the dimness of antiquity, but, unlike that epidemic, has not confined its ravages to the Old World. It is invested with peculiar interest to us, from the fact that it has become naturalized in the sunnier portions of the United States, and makes almost annual excursions northward. In fact, it has not been long since we were gazing sadly upon, and sympathizing helplessly with, two afflicted cities not far to the southward—Norfolk and Portsmouth—and the shadows of grief and mourning occasioned by the ruthless ravages of the pestilence yet hang heavily on many hearts.

Yellow fever has repeatedly ravaged cities on both continents and both hemispheres, yet its northern isothermal boundary stops short of that which circumscribes the plague.

It cannot be expected that I will here allude to the various epidemic visitations of this disease, appearing in this country and elsewhere, nor instance the thousands that have been swept away by its tornado-like visitations at New Orleans, Norfolk, Philadelphia, and elsewhere in the United States; at Vera Cruz, in Mexico; Havana, in Cuba; Georgetown, in British Guiana; Rio Janeiro, in Brazil; or Barcelona, in Spain. Limited as is my time and space, I propose to deal less with historic record than with the geographical relations of the disease under consideration—its atmospheric and terrene causative phenomena.

At the close of the seventeenth and the beginning of the eighteenth centuries this fever was, perhaps, more extensively prevalent as an epidemic, and more fatal in its attacks, than at any former time of which we have record. In 1793, in Philadelphia alone, more than four thousand died of the disease in a few weeks, and at one time the vomit-pestilence swept its victims into eternity at the fearful mortality of more than a hundred a day. Nearly all business was suspended save caring for the sick and burying the dead; the demand for coffins was more insatiable than the demand for bread; and the roads to the cemeteries were the only ones not deserted. In 1795 nearly four hundred died from the disease in Baltimore; and three years later, nearly six hundred. In 1798 Philadelphia and New York were terribly devastated; in the former city nearly three thousand perished, and in the latter more than two thousand. In the year 1800 the fever prevailed extensively in New York, Baltimore, Providence, Charleston, and Norfolk, and raged with still more terrible severity in cities on and near the Mediterranean coast in Spain. In Seville alone, it is estimated that more than twenty thousand persons perished. In 1804 Spain was again the seat of its most ruthless devastations, in which kingdom, in that year, it is supposed that it destroyed nearly sixty thousand lives. From Malaga alone twelve thousand went to swell the mortality records, and the city was rendered desolate. Business, trade, pleasure, religious observances, everything was suspended, save death, which went ruthlessly on gathering victims from every house which desertion had not rendered tenantless. The sick groaned alone, with no ear to hear, nor heart to sympathize, and often drew their last breath untended and unwatched by friend or kindred. Parentless children went weeping, and ownerless dogs howling through the streets, adding the evidences of woe to desolation.

After 1805 the yellow fever ceased to excite any alarm as an epidemic, until 1819, in which and the following year it fully made up in general prevalence and fatality of attack what it had lost by a few years of quiescence. New Orleans, Mobile, Natchez, Charleston, Baltimore, Philadelphia, New York, and several other towns of less note, were almost simultaneously attacked and suffered terribly. During the same years it raged with great fatality in the West India Islands, at Vera Cruz, in Mexico, and in various cities in Spain. At Cadiz alone, in 1819, five thousand perished from the disease.

For nearly thirty years the fever again ceased to rage as an epidemic. In 1850 it commenced anew its ravages; Rio Janeiro, in Brazil, was swept as with a besom of destruction. In a few weeks, in that city, and on board the becalmed vessels in its port, ten thousand hearts ceased to beat, and ten thousand human forms found a hurried sepulture. For the next five years the fever continued to prevail, progressing northward. In 1852 the West India Islanders, and the dwellers upon the shores of the Caribbean Sea and the Mexican Gulf, severely felt its ravages. In 1853 it revisited its old haunts in the United States; and its fatality can be judged of when it is remembered that more than eight thousand persons perished in New Orleans. The appearance of the disease at Norfolk and Portsmouth, and the more than four thousand deaths occasioned by it, in 1855, is too fresh in our minds to need further remembrancing.

The above brief allusion to some of the principal manifestations of this affection, I trust will prove sufficient to indicate its geographical relations, and fix in some measure its terrene causative dependencies. You will observe one point of difference in the geographical distribution of yellow fever and the plague: the latter confines its ravages principally to a certain zone in the northern equatorial half of the Eastern Continent; the former, although it has latitudinal limits, finds its victims in both continents and both hemispheres. You will also see one point of resemblance; for while the plague does its deadliest work upon the low, damp, and hot coasts of the Mediterranean and the Levantine seas, the yellow fever commits its ravages in similar situations upon the hot coasts of the Atlantic and the steaming deltas of its many rivers. You will doubtless observe, also, that while yellow fever visits Rio Janeiro, Havana, New Orleans, Philadelphia, and other cities, it does not visit Oriental cities similarly situated, as, for instance, Athens, Florence, and Constantinople. It will doubtless strike you as even more singular that, while yellow fever desolated Malaga and Barcelona, in Spain, it was the plague that committed such terrible ravages at Marseilles and Avignon, in France. The reason for this geographical arrangement of the two diseases it would certainly be interesting to know, and I shall have occasion to refer to the subject again before concluding this paper.

Yellow fever is emphatically a disease of hot weather and warm climates, occurring mostly between the 25th parallel of south latitude and the 35th north. It is true, it has passed the 40th degree north in visiting Barcelona, in Spain, and New York and Boston, in the United States; but such incursions northward have only been made when favored by a tropical identity of climate. It should be remembered, however, that it is not degrees of latitude that bound the disease, but that it is circumscribed by isothermal lines, represented by an average temperature of about 80° F.

Dr. Barton, of New Orleans, says that a temperature above 90° is too high for the production of yellow fever. This statement probably needs confirmation; for in 1854, on one occasion, it is said the thermometer, in Charleston, stood at 93° at midnight, and that for four months the average temperature was 80°; yet the fever was never more fatal than in that city at that time; even negroes who were born there were not exempt from its fatal ravages. It will be remembered that Charleston is between the 32d and 33d degree of north latitude, and it is highly probable that at Georgetown, in British Guiana, which is in about the 6th degree of latitude, and at Vera Cruz, which is below the 20th degree, the temperature at times ranges above 90° F. I regret that I need statistics of the average temperature of the two places last named; but I am certain that the fever has prevailed repeatedly in both, and always during, or immediately subsequent to the hottest season of the year. Heat, however, is not a direct cause of yellow fever; it acts secondarily through its influence upon other atmospheric and terrene conditions.

In speaking of the plague, I said that any person who would take the trouble to examine the history of the various manifestations of that epidemic, would be surprised to see how uniformly it confined its ravages to cities situated on low, marshy sites, on the banks of rivers, or near the sea-shore. I now propose to show that, as to site, the predilections of yellow fever are the same, and that, to all appearances, the terrene causative phenomena are identical in the two diseases.

Commencing then with Rio Janeiro, it is unnecessary to remark that it is situated nearly in latitude 23 degrees south, and on the western shore of a bay opening into the Atlantic. The site of the city is a marshy plain. Half a mile back from the shore the elevation is only five feet above the level of the sea. The back ground is composed of precipitous mountains, varying in height from 1500 to 3000 feet. The soil is an alluvia, composed principally of clay and vegetable mould. "The granite hills around the city, as well as the expanded surface of the bay, constitute reflectors of the calorific rays which augment the temperature and humidity, which are not abated much by the winds, because they are interrupted by the disposition of the mountains."*

The streets are narrow and imperfectly paved, and, in consequence of the levelness and lowness of site, all the filth incident to a maritime city either reeks in the full blaze of the summer's sun, or sinks just below the surface of the soil, to stagnate, and putrefy, and poison the air with its noxious exhalations. Added to all this, its geographical position makes it a commercial centre of trade with the different nations of Europe and Asia, also with Oceanica; consequently the ships of nearly all nations congregate in its port.

In almost exactly the same degree of latitude north that Rio Janeiro is south, stands Havana, in Cuba, to which and to Vera Cruz, in Mexico, which is about four degrees farther south, I invite a moment's attention, as yellow fever has prevailed endemically in these maritime cities ever since it excited much attention as a distinct disease. Havana stands on a plain facing the sea to the eastward, and, like Rio Janeiro, is surrounded in all other directions by high hills, which obstruct the winds and concentrate the heat. "In one corner of the plain and near the harbor is a swamp, the exhalations from which are wafted over the city and shipping."* The Gulf Stream brings to the coast and the waves throw upon the shore an immense quantity of sea-weed, the decomposition of which, under the action of an almost tropical sun, adds poisonous exhalations to an atmosphere already impure.

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* Medical Examiner, vol. xi. p. 645.

Dr. Dupierris, of Havana, gives a sad picture of the hygienic condition of this city, even as late as 1857. I have space for only a short quotation. "The public cemetery is here a nuisance. The soil is sandy and only two or three feet deep, and rests on a hard rock. The emanations from the decomposition of the bodies deposited here are sensibly felt." "The streets are for the most part narrow, badly laid out, unpaved, with the surface broken into irregularities, and obstructed with impurities. In other places one is disgusted with the sight of filthy ponds or stagnant pools, apparently to receive rain water, the refuse and offal from houses, and a heterogeneous mixture of all kinds of abominations, among which are included dead animals and the like."†

Vera Cruz is the largest city on the Western Gulf coast, and, like the two cities above mentioned, is situated on a plain facing the sea and surrounded by hills. In the rear of the city, and in front of the hills, are large swamps, which in the hot season always load the air with miasm, and whose waters filtrate to the cellars and wells of the city.

Norman, in 1845, said of the city: "The outside looks solitary and miserable enough. The ruins of deserted dwelling-houses, dilapidated public edifices, neglected agriculture, and streets once populous and busy now still and overgrown with weeds, give an air of melancholy to the scene, which it is absolutely distressing to look upon."‡

Passing south to the sixth degree of north latitude, I would for a moment direct your attention to Georgetown, situated at the mouth of the Demerara River. This is a large town, situated on an alluvial plain, below the level of the sea, from which it is protected by embankments. The buildings are of wood and are raised from the ground on pillars. To the east and north of the town, on the front lands of the coast, are many thousand acres of jungle. Dr. Blair, surgeon-general of the English army division stationed at British Guiana, says: "To the north, during the time of the epidemic, there also existed a naked marsh of about two hundred and fifty acres. During each high spring tide the sea covered the surface of the marsh. The soil was composed of the usual constituents of our foreshores, viz., clay, caddy, and drift mud. The marsh was tufted with a coarse grass, under whose half-withered leaves myriads of insects were sheltered; innumerable crabs burrowed throughout; fragments of drift-wood, bones, dead spawn, dried molusca, and small fish, left by the retreat of the tide, were scattered profusely over the surface."*

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* Drake's Diseases of North America, vol. i. p. 47.

† North American Medico-Chirurgical Review, vol. i. p. 873.

‡ Norman's Notes of Travel, p. 96.

A town situated on such a site, with such surroundings, under the burning influence of a tropical sun, supplied with no water save what infiltrates from the marshes, could only be expected to be unhealthy; and no one will be surprised to learn that in 1837 *sixty-nine* per cent. of the English forces quartered there perished with yellow fever.

Passing northward to the thirtieth degree of latitude, I would call your attention to New Orleans, which is situated on a low, alluvial plain, on the left bank of the Mississippi River, below the level of that river at high water, and only ten and a half feet above the level of the sea. New Orleans is mostly surrounded by lakes, at distances varying from four to thirty miles; thus directly north and nearest is Lake Pontchartrain; east is Lake Borgne; and on the south is Lake Ouacha and other smaller lakes; to the west they are absent, but in that direction the broad bosom of the river stretches away meanderingly for a distance of seventy miles. "Even this presents an inadequate idea of the extent of watery surface, for in every direction from the city, unless when we travel on the 'coast' or river bank, we encounter cypress swamps, terminating either at the shores of a lake or in grassy savannas too wet to be traveled over. Before levees were raised upon the banks, the whole region was annually overflowed; but during nine months a strip on each side, varying from a few yards to a mile in width, was dry on the surface, yet abounded in water underneath."† Even now the ground upon which the city stands is so damp that water can be obtained anywhere at the depth of a few feet, which water either infiltrates from the river or the stagnant marshes. It must be evident that, during the hot season of the year, the swamps in the rear of the city must fill the humid air with their poisonous exhalations. It is not from the rear of the city only that the seeds of disease and death emanate; for the streets adjacent to the river, for three miles, are compactly built up with warehouses, market houses, drinking houses, oyster houses, sugar wharves, cotton presses, etc., from which issues a vast quantity of filth and organic recrements, which foul stratum reeks in the burning sun of the thirtieth degree of latitude, and sends forth noxious exhalations to commingle with those from the swamps, the filthy streets, and the well-filled cemeteries of the city.

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* Account of the last Yellow Fever Epidemic of British Guiana, by Daniel Blair, M.D., p. 5.

† Drake, on the Diseases of the Mississippi Valley, vol. i. p. 98.

It may be supposed that the beautiful and usually healthful City of Philadelphia, which has repeatedly been desolated by the yellow fever, would present an exception to those atmospheric, geographical, and terrene sources of disease, which have been found to obtain in the other cities to which special allusion has been made. But an examination will show that it does, or at least has presented in abundance the same causative elements of the fever which have been found to exist elsewhere. Philadelphia is situated upon a low and level tract between the Delaware and Schuylkill Rivers. The soil upon which the city stands is argillaceous to some depth, though underlaid by a tertiary formation of sand and gravel. Various marine deposits show that the site of the city was once covered by the sea, and so retentive of moisture is the soil, that water is usually found at the depth of ten or twelve feet. The wharves or quays extend for several miles along the margin of the Delaware, and are built of square casements of logs, filled up with earth and stones. These square casements, projecting into the river, include open spaces or docks between them, the water in which is cut off from the current of the river. It is into these spaces that the gutters and sewers empty the filth of the city; all the debris accumulating in the warehouses, market houses, drinking houses, and upon the wharves, finds there a lodgment, which nauseous elements of putrefaction, conjoined with the filth brought there by high tide, remain, and in the heat of the summer's sun decompose and fill the air with offensive and poisonous effluvia.* Back of the wharves, and running from one extremity of the city to the other, is Water Street, which has always played an important part in yellow fever epidemics. "The houses on the western side of the street are built against the elevated ground, which was once the back of the river, and hence the lower story at the back part is constantly damp, and even wet at times, by the percolation of moisture from the earth, against which the lower part of the wall rests. There is, of course, no yard room, and the privies are placed in the cellars. On the other or eastern side of the street, nearest to the river, the houses back on the stores or warehouses, which are built along the wharves facing the river; and here again is a want of common space for yard, so as to allow of ventilation, or the construction even of privies. The street itself is narrow, and lined on both sides by high houses, once occupied by the better and some of the wealthier classes; but for a long time past they have been either converted into warehouses and petty shops, or are tenanted by lately-arrived emigrants, poverty-stricken residents, and sailors."† The neck of land below the city is low, flat, and marshy, and was formerly an unreclaimed swamp whose waters stagnated in the summer's heat. There were, in earlier times, other elements of disease at work which are now nearly or quite eradicated. Space will not permit their full enumeration ; suffice it to say, that the city plot was once partially traversed by small streams, the principal of which were Dock Creek and Pegg's Run. These streams received the offals of many slaughter-houses, tan-yards, glue, starch, dressed skin, soap manufactories, and stables adjoining, as well as the contents of culverts, privies, and the gutters of populous streets and filthy alleys. These miry streams, in the hot weather, were often destitute of water ; consequently the accumulating filth putrefied in the sun, and sent up highly offensive and noxious exhalations.*

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* See a fuller description, of which this is but an imperfect and condensed one, in La Roche's valuable work on Yellow Fever.

† See Medical Examiner, vol. xi. p. 596.

Perhaps I have dwelt longer upon the geographical relations and terrene dependencies of yellow fever than seems necessary, but I am loth to quit the subject. So far it has been shown that those cities which have felt the ravages of the fever most have been low, damp, and hot, in the vicinity of stagnant marshes, and containing without their very precincts all the elements of disease, which arise from defective sanitary regulations.

He who will take the trouble to examine for himself will find that protracted high temperature approximating the elements to a tropical one, accumulations of vegetable and animal matter, acted on by heat and moisture, defective sewerage, filthy streets, confined, damp, and badly ventilated habitations, characterize all places that, at different times, have been ravaged by the disease.

I will mention but one other terrene condition having relation to yellow fever as a probable favoring cause ; I have reference to the character of the water used by the citizens in the affected localities. Dr. Barton truly says, "town water is town air," and it is highly probable that impurities, entering the stomach with the former, are not less deleterious than when they enter the lungs with the latter. It cannot be doubted that water sometimes holds in suspension or solution matters positively injurious to health. Thus, when it percolates from marshes, it may carry with it putrescent organic matter prejudicial to health, also when it infiltrates from graveyards and the vaults of privies; it may contain the poisonous elements of animal decomposition. It is said of the earlier visitations of yellow fever in Philadelphia, that "at that time no water works had been erected, and the inhabitants were compelled to use wells, which, being shallow, were tainted with all the impurities which can filter through the soil of a city." Devèze says : "The drainings of the graveyards found their way into some of these wells, and the water from them became putrid within twelve hours from the time it was drawn."* The water used in most of the cities in which yellow fever has prevailed has been rendered impure from a combination of both these causes. Bordered by marshes, the sites of the cities low, undrained, and, in most instances, unsupplied with water-works, the wells from which the necessary supply of water has been drawn have been replenished by percolations from swamps, vaults of privies, tan-yards, stables, and the many other sources of impurity which characterize all large cities. With the exception of water, it will be observed that terrene conditions of the disease act meteorologically, or through the medium of the atmosphere. The water actually used is really the only exception, for the unused water, when exposed, will, as well as animal and vegetable putrescence, exhale its noxious properties into the surrounding atmosphere. Thus "the putrid water of the Cove in Baltimore, with its mantle of green slime broken by bubbles of fetid gas from the bottom, and its floating islands of dead dogs, was a most potent agent in the induction of yellow fever. The men who were employed to clear it out were almost stifled with its effluvia, and the inhabitants of its shores died in great numbers of the fever. The cellars that sent up such a deadly gas from the pools of water which filled them as to kill the very flies hovering over them, were recognized by Dr. Drysdale as efficient causes of the disease."† Dr. Barton calls the meteorological and terrene conditions "the two blades in the shears of fate." But it will be observed that most of the meteorological conditions have a geographical or terrene relation to latitude and elevation, to moisture, atmospheric stagnation, miasm, etc., to locality and surroundings. The influence of climate—a vague expression so often used—is causative of the fever under consideration mainly, if not entirely, through the presence of noxious emanations and the hygrometric state of the atmosphere, which emanations and humidities have a direct dependence upon topographical circumstances, the nature of the soil, relative position to the sun, prevailing winds, weight of the air, and other causes.

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* La Roche on Yellow Fever.

I have repeatedly referred to dampness of site, of soil and surroundings, as a causative condition ever present where yellow fever is produced. Humidity, as an atmospheric condition, is deserving of a moment's further consideration. Frequent showers are not the only condition that gives rise to atmospheric humidity. High temperature, a large evaporating surface, a low site, and atmospheric quiescence, are conditions which may load the air heavily with moisture.

Atmospheric humidity acts in three ways in producing disease. First, it is indispensable to those putrid emanations which alter the healthy conditions of the air, and the greater the humidity the greater is the amount of miasm which the air is capable of holding in suspension, and, consequently, the more rapidly the infection. Second, by embarrassing cutaneous and pulmonary exhalation, moisture in the air causes secretions to be returned back into the fluids of the system and there act as poisons, disturbing the harmony of the functions not less effectually than though they were received into the system from without. According to Dalton, a man, under ordinary circumstances, exhales from the skin and lungs about thirty-seven ounces of fluid in twenty-four hours. These exhalations are imbued with effete matters from the organism, the retention of which must engender disease. Collard de Martegna has shown that the air expired contains $\frac{3}{1000}$ of purtrescent organic matters, any diminution in the exhalation of which must poison the system in the same manner and as effectually as though miasms were directly inhaled with the atmosphere. Third, the cutaneous exhalation of moisture and its evaporation from the surface acts directly as a cooling process, thereby rendering endurable a high temperature. In a damp atmosphere the cutaneous exhalation is not only less abundant, but its evaporation is retarded. Every one knows how much more oppressive is a hot and damp than a hot and dry atmosphere. A shower on a very hot day may actually cool the atmosphere several degrees, yet every one knows that the sun's heat is often even more oppressive than before. The reason of this is, the rain falling upon the hot and dry earth is rapidly converted into vapor, increasing the atmospheric humidity, and decreasing the cutaneous evaporation. A damp and retentive soil, marshes, rivers, lakes, and the sea-coast, are all sources of atmospheric humidity, and a cloudy sky, by checking radiation and retaining the heated vapors, may intensify it. Mountains may act in the same way by shutting out the cool and dry air, which is so healthful on the hills, and hemming in the hot air of the valley, filled with humidity and miasms. Dr. Lallemant tells us that when the yellow fever raged so deadly at Rio Janeiro, clouds often covered mountain tops; lightnings flashed, thunders rolled, and rains fell there and upon the plains beyond; but in the valley "the city and its vicinity were in the greatest apparent tranquillity of nature, the tranquillity of a cemetery." From what was said upon the geographical relations and terrene conditions of yellow fever, it will be seen that most of the conditions favorable to the production of great atmospheric humidity were present in all places where the disease prevailed epidemically.

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* Harper's Magazine, vol. xiii. p. 786.

† Harper's Magazine, vol. xv. p. 199.

Perhaps I have said more upon the subjects of putrid exhalations and humid atmosphere than seems necessary, but I have said less than I desired, for in the furtherance of this report, I shall have occasion to make frequent reference to those conditions, as causative of disease. Akin to the hygrometric state of the atmosphere is a high dew point. The dew point, I need not say, is the precise degree of temperature at which moisture is deposited from the atmosphere upon any cool substance. The higher the dew point then, the higher the temperature at which moisture is deposited, the greater the amount of watery vapor which the atmosphere is capable of holding in suspension. Dr. Barton places much stress upon a high dew point, and says yellow fever cannot prevail without it. He places the dew point of the fever at from 70° to 80°, and says it rarely exists when it is less than 60°. All that has been said in regard to atmospheric humidity will apply to this subject, and hence it is unnecessary to make additional remarks in regard to it. When noticing the plague I neglected to mention a high dew point as one of the usual conditions attending its manifestations. The dew point of the plague is high; but observations upon this point have been too limited to determine it exactly: it is probably between 60° and 70°.

Like the plague, yellow fever never appears above a certain elevation. What that certain elevation is, remains yet an unsettled question. Major Tulloch says it never has been known, in any climate, above 2500 feet above the sea. In Mexico, Humboldt says an elevation of 3243 feet forms the upper limit of range of yellow fever. It is highly probable that the fever ceases to appear at points far below these figures; certain is it that in this country, be the conditions of localities what they may, the disease has never yet appeared at an elevation above 400 feet. Memphis is the highest point in the United States where yellow fever has ever occurred; in fact, the disease has never appeared there but once, and then in 1828, when the fever prevailed as a mortal epidemic. Memphis is 400 feet above the Gulf of Mexico. When the disease prevailed in Rio Janeiro, an elevation of 400 feet upon the hills in the rear was found to present an insurmountable barrier. The reason of this exemption upon the hills, or at any considerable elevation, is, first and primarily, because of more thorough ventilation and less concentration of heat, the temperature is not high enough to sufficiently elaborate those causative conditions ever present where the fever exists, putrid exhalations and atmospheric humidity. The diminution of atmospheric pressure and the greater elasticity, and purity, and mobility of the air are other conditions favorable to exemption from the fever, which are usually present in elevated situations.

Is yellow fever contagious? This is a question that may be appropriately asked here. I do not propose to examine it at length, however inviting such a labor might be, but as briefly as possible make a statement of my convictions—convictions by no means hastily arrived at.

It would seem, from this hasty and imperfect sketch of yellow fever, as if a sufficiency of local causes had been found, in every instance, to account for the development of the disease, without invoking the aid of contagion and importation. This question is one upon which the profession is at present divided, and it is certainly one of paramount importance. If yellow fever is contagious, then sanitary cordons and quarantine regulations are the only safeguard of a city having commercial relations with a locality in which the disease prevails. If the disease be contagious, then it is presumption to allow those exposed to its influence to flee where they list, spreading the elements of contagion broadcast over the land. But if the disease be not contagious, then is it cruelty in the extreme to deny food and shelter to the fugitives fleeing from the mournful scenes of death; yea, it is base inhumanity to drive them back, disheartened and half starved to the afflicted city, to become themselves victims of the epidemic. Such cruelties and inhumanities have been acted over and over again, not only in dark ages and unenlightened countries, but in this country, even during the last epidemic. Of the cowardly selfishness enacted at Norfolk and Portsmouth, one writer says: "The ties of blood were sundered, bonds of alliance were as if they had never been, friend shuddered and shrank from friend, the sick and dying lay in hopeless despair, with none to moisten their parched lips, nor administer a soothing draught, while burial for the dead was with difficulty obtained." Men, women, and children fled by thousands to the pure air and healthy regions of the country, many not on their own account simply, but with the hope of saving a beloved wife, or dear little ones, from the ruthless ravages of the deadly visitant. In regard to these fugitives, another writer says: "In many instances a refuge was denied the unhappy fugitives, they were driven out from the places whither they had fled, and all intercourse with them was prohibited." Many were denied the comforts of life, and a home in the habitations of men, and were compelled to take shelter in barns, sheds, and school-houses, or to return and take their chance with the sick and dying that remained. If the disease be not contagious, that fact should be distinctly stated by the profession, and rightly understood by the public.

Much of the controversy that has originated upon the subject of contagion has been from a diverse conception or understanding of the term, and conflicting opinions might, in many instances, have been harmonized, had disputants rightly understood each other. It will be sufficiently accurate to answer my present purpose, to say that *all contagious diseases are produced by a specific poison, which poison is formed in the living fluids of the body; and they may be reproduced indefinitely, always with the characteristic symptoms of the disease, by a direct and unchanged* *emanation from the body of a person under the active influence of such specific poison.* Diseases strictly contagious—originating in a specific virus—abundantly reproduce in the living fluids, and emit with the exhalations from the skin and lungs the same specific virus; which poison, when introduced into the blood of a healthy person, whether by inhalation or otherwise, is capable of producing in that person the same disease, and in like manner, the disease may be propagated indefinitely. Dr. Wood says: "There can be little doubt that the cause of yellow fever is peculiar and specific, as much so as that of small-pox or scarlatina."* From the explanation given above, it will be seen that the specific virus of contagious diseases, small-pox, for instance, originates *within* the living blood; the poison producing yellow fever may be specific, but all pathologists agree that it originates *external* to the body.

The contagious nature of yellow fever has been urged from the fact that the disease nearly always occurs first in a city near wharves, where vessels arrive from abroad and unload. To me this fact seems equally strong in favor of the non-contagious nature of the disease, for it is in such localities that those atmospheric and terrene conditions, previously referred to, are to be found in greater concentration and potency.

Again, it has been urged in disproof of the local origin of the disease, that the temperature and dew point are as high, and the atmospheric humidity and miasmatic accumulations are as great in Constantinople, for instance, where yellow fever never occurs, as in Philadelphia or Baltimore, at which places the disease has repeatedly prevailed as an epidemic.

Strong as this fact may at first appear, no stronger is needed to prove the non-contagiousness of the fever; for, if the disease be really contagious, it would be as likely to be imported into one maritime city as another; the quarantine regulations of Athens, and Rome, and Constantinople are probably not superior to those of New Orleans, and Vera Cruz, and Rio Janeiro. And even supposing they were, this argument of the contagionists is really worthless, for though all the conditions necessary for the production of yellow fever seem to be present, yet it is by no means certain that the peculiar and necessary arrangement of those conditions exists. Liebig has demonstrated that animal and vegetable matters, in a state of decomposition, yield different products according to varying meteorological, or, sometimes, unknown conditions.

Starch, gum-arabic, and cane-sugar are composed of precisely the same elements, and the two latter in precisely the same proportions, but, from a different arrangement of those elements, their sensible properties are quite dissimilar. It is highly probable that from some meteorological or unknown cause the products of animal and vegetable decomposition are different at Constantinople and at New Orleans, giving rise, in the former place, to a miasm, deficient in some condition or element requisite for the production of yellow fever. If this be not so, it may be supposed that the causative conditions requisite for the production of the fever, though all present, have not that peculiar arrangement necessary for the production of the disease under consideration. Under these circumstances, these causes will not prove inoperative, but will develop the plague, cholera, or typhus, whichever the conditions are exactly calculated to promote.

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* Practice of Medicine, vol. i. p. 311.

It has been claimed, in the third place, that individuals, going from an infected neighborhood into a healthy one, have become centres of a new infection; but this claim is, doubtless, without foundation. So far as I know, no well-authenticated case has ever occurred where the disease has apparently spread from one person to another, *in decidedly healthy localities.* It is true, that a person fleeing from a yellow fever locality, with all the seeds of the disease in his system, may himself have the fever in any locality, however healthy, but it is, probably, not true that he can impart the disease to others. Persons leaving New Orleans or Philadelphia, during the height of a yellow fever epidemic, may take the disease, and die with it at Columbus, Ohio, or Springfield, but they never can, in such localities, become the centres of a new infection. In fact, experience has demonstrated over and over again, that no fear of contagious communication is to be apprehended from the effects of emigration. These facts should be generally understood and appreciated, then may we look for a display of an enlarged humanity in the rural districts, near affected localities—then may we look for an abandonment of those theoretical notions of contagion, whose cruel fruits have, time after time, added thousands to the dark catalogue of death, by refusing a resting-place, shelter, and food to fugitives; compelling them to go back to deserted homes but to increase the demand for coffins and the labors of the sexton.

Dismissing the subject of contagion, I would say that yellow fever *cannot exist without the presence of a miasm, having a certain origin, and developed under certain conditions.* This origin, it is presumed, is partially animal and partially vegetable, with an active preponderance of the former. The fact that the disease only originates where men congregate, as in large cities, where the air is poisoned with human exhalations and the putrescent effluvia arising from decomposing human and animal excrements, and where, from circumstances, the very water is poisoned with percolations from privies and many other sources of animal putrescence, abundantly establishes the partial animal origin of the miasm. The lowness of site, the alluvial, argillaceous and undrained soil, the surrounding swamps, and, in some instances, the luxuriant growth and large deposit of sea-weed—conditions, with, perhaps, the exception of the last, always present, go to show the partial vegetable origin of this poisonous element of disease. The active preponderance of the animal origin derives support from the well-known fact that at New Orleans, and all other cities where the disease prevails, it first makes its appearance where the sources of animal filth are most abundant, and subsequently the attacks, in other streets, are in the order of the intensity of the miasmatic and other causes. In New Orleans, the animal and vegetable miasms have distinct centres; the animal miasmatic centre is along that side of the city facing the river, while the vegetable miasmatic centre is at the marshes bounding the opposite side. It is unnecessary to say more in regard to the origin of the causative miasm; the conditions requisite for its development are prolonged high temperature and dew point, with atmospheric humidity and stagnation, to intensify the miasmatic action. It is not difficult to see how miasms may disturb the healthy economy and produce disease. We all know that small-pox and glanders are produced by a specific poison, but that poison is animal matter in a state of decay. Some of us may know something experimentally of the painful and dangerous consequences resulting from wounds received in dissection; yet such consequences are produced by the reception into the system of a small portion of decaying animal matter. It has been demonstrated that man passes through his lungs more than 330,000 cubic inches of air daily; now, if this air contains miasms in the same minute proportion that it contains carbonic acid ($\frac{1}{2500}$), then more than twenty grains of poisonous exhalations might be received into the system through the lungs daily. This calculation is independent of what may be absorbed through the skin, or received with the food and drink. Some of you may remember the one hundred and forty-six English prisoners, confined for a night in the Black Hole of Calcutta; they struggled and pleaded vainly for fresh air, which was denied them; the morning light revealed only twenty-three ghastly survivors of the unhappy band!

It is needless to protract remarks to show the facility with which disease is developed, by the introduction into the system of animal or vegetable poisons, of which the atmosphere may become the vehicle.

If yellow fever is caused by a miasm, having a certain origin, and developed under certain conditions, it may be asked why it does not prevail annually at places where such miasm is supposed to be developed in the heat of every summer? At New Orleans, Vera Cruz, and Rio Janeiro, heat and moisture are annual visitants, and the filth of the cities, and the exhalations of the adjacent marshes, poison the air each year with their noxious gases. Why then is not yellow fever as regular in its outbreaks, in these cities, as are intermittent fevers among the suburbans adjacent to the swamps? This is a question, perhaps, not easy of solution; it has certainly staggered many, who else would have adopted the idea of the local origin of the disease. My opinion is that this question has its origin in, and is prompted by, an error in fact. The error consists in supposing that all miasms are alike; that the apparently similar conditions of heat, moisture, animal and vegetable decomposition, must develop the same products, and produce the same disease. I have already attempted to show that such is not the fact. Many circumstances cause the products of decomposition to vary, as, for instance, a diversity of decomposing substances, varying meteorological conditions, and dissimilar excitants to decomposition, decaying plants,—each yield an aroma peculiar to itself, of which peculiarity the sense of smell is abundantly cognizant. Emanations from marshes and graveyards are dissimilar; the effluvia from damp cellars and filthy stables are unlike; the gases arising from privies and from slaughter-houses or tanyards are not identical in sensible properties, and, probably, not in physiological effect. Thus dissimilar sources give dissimilar results.

The juice of grapes, decomposing under one condition, produces wine; under another, vinegar. A peculiar excitant added to a solution of cane-sugar converts it into alcohol and carbonic acid. Take two atoms of small-pox virus, inoculate a man with one atom and a cow with the other; the one will produce in the man a genuine small-pox, the other in the cow will produce a disease at least identical in nature. Take again two atoms of virus, one from a pustule on the man and the other from a pustule on the cow, introduce each into different men; and the one from the pustule on the man will produce again the genuine small-pox, the other atom will only produce a very insignificant disease, though allied to small-pox in nature, and identicâl in results. Thus a slight circumstance or varying condition may disarm a virus of its disease-producing intensity.

The elements of disease in a city, as New Orleans, for instance, may seem to be uniform, one year with another; the same sources of miasm exist within the city; the same marshes and lakes without; and the same sun influencing the whole. But these elements of decay, of exhalation, of miasm, must develop a poison of varying powers—a virus of different disease-producing qualities. This is the reason why these disease-producing elements give rise at one time to one disease, at another time to another and dissimilar one. Thus intermittent, remittent, and malignant bilious remittent fevers, yellow fever, cholera, erysipelas, diarrhœa, and dysentery may each, at different times, be developed, the which being determined by the peculiar products, or combination of products, of the disease-producing elements.

This varying manifestation of disease some have referred to a peculiar epidemic influence or poison. But the epidemic constitution, about which so much is said, it seems to me is nothing more nor less than *a peculiar miasm, developed under peculiar terrene and meteorological conditions.*

There is one idea, to which allusion has not been made, that is worthy of a moment's attention, which is, that *local miasms may be modified by miasms brought from abroad.* Thus heat and moisture, city filth and marsh miasms, may be operative with accustomed intensity, at Philadelphia, for instance, and yet yellow fever does not prevail. At this time a steamer may arrive from Rio Janeiro with no fever on board; may unload its cargo, containing perhaps many elements of putrescence; the offensive bilge-water is pumped out, and the vessel thoroughly cleansed. These new elements of putrefaction may act as an excitant or ferment upon the local miasms, producing new elements, all sufficient for the production of yellow fever. Some may suppose that this amounts to nothing less than contagion and importation. But a moment's reflection will show the fallacy of such an idea. The imported miasm is wholly insufficient to produce the disease itself, and it is only by a combination with local miasms, as a new excitant, that yellow fever is developed.

Perhaps I have protracted my remarks upon yellow fever beyond the limits of your patience. I have endeavored to show that this disease can only exist in the presence of certain atmospheric and terrene conditions; that the terrene conditions at least are under the control of man, and that the atmospheric are alone inadequate to its development.

A yellow fever epidemic is but the voice of an inexorable law, silently proclaiming man's sinful negligence of the laws of health and of life. When man will do his duty to himself and to his fellow-man, "when the putrid, decaying, noisome atmosphere exhaled by churchyards, slaughter-houses, the tanks of dirty water companies, cess-pools, sewers, crowded dwellings, etc., is purified and dissipated," then will epidemic poisons no longer remain in undisturbed possession of the earth and the air.

It is not to be presumed that certain portions of the earth's surface were destined to be devastated and depopulated by periodical visitations of deadly epidemics. The doctrine of Talfourd is, that "the immense regions of unbounded fertility, long succession of spicy groves, trackless pastures, watered by ocean rivers, formed to let in wealth to great continents, and islands which lie calmly on the breast of crystal seas, were not created for eternal solitude and silence." The doctrine of Talfourd is doubtless correct, and if man will do his duty, in removing the terrene conditions of disease, the time will come when yellow fever epidemics will cease to depopulate the tropical and sunny regions of the earth.

The author would remark that the preceding paper was written three years ago, and for a year past has been in the hands of the editors of the REVIEW, waiting its turn for publication. This explanation seems the more necessary, as he has made no use of, or reference to, the proceedings of the *Sanitary Association*, which has convened and published its transactions in the mean time. Those transactions have not fallen under his observation, and consequently could not have influenced his opinions, or materially altered the foregoing, had it just come from his pen.

ART. III.—*Case of Areolar Cancer of the Peritoneum, with Hæmatocele of the right and Encephaloid Disease of the left Ovary.* By J. FORSYTH MEIGS, M.D., Physician to the Pennsylvania Hospital.

MISS B., aged twenty-seven, was one of a large family, the members of which are generally healthy, with the exception of one sister, who has had several attacks of slight hæmoptysis, but who is still living in good health. Her mother died, when Miss B. was still young, of phthisis. Her own health had been good, with the exception of an attack of typhoid fever and some suffering from dysmenorrhœa, up to the spring of 1860, when she began to lose color, and complained occasionally of not feeling quite so strong as usual, but was not thought by her family to be seriously ailing, and consulted no physician, as she would certainly have done had either she or her family supposed that she was seriously out of health.

About the middle of June, 1860, toward the menstrual epoch, she helped to carry a moderately large trunk down the staircase. She had taken the lower end of the trunk in order to save a favorite elderly servant, and bore the principal part of the weight. While doing this she was seized suddenly with a pain, accompanied by a sensation of a snap, as of something giving way, in the region of the left groin. This pain was quite severe at the moment, but soon passed away, and was entirely forgotten until recalled by careful questioning as to the cause of her illness six weeks afterward. The night of the day on which this occurred she had some nausea, and was not well from that time.

About the seventh of July I was sent for to see her. She was at a friend's house, going about as usual, not thinking herself seriously ill. I was told that she had pain in the lower part of the back, in the groins, and hypogastric region, not severe, but annoying. She had frequent micturition, severe pain in voiding the bladder, decided constipation, and considerable nausea. Her appearance was that of one suffering from moderate anæmia. I supposed that she had some displacement of the uterus, and ordered a mild cathartic composed of senna electuary, cream of tartar, sulphur, and carbonate iron, (Graves's paste,) an elixir of cinchona, and a great deal of rest on the back.

I saw her again on the ninth of July, at her window, dressed, in excellent spirits, merely looking rather pale, and with the same symptoms as before, except that the pain had increased.

I left town on the following day, and did not return until the twenty-fourth of July.

A few days after this her symptoms became much more severe, and Dr. F. G. Smith was sent for. She now had severe pain in the pelvis, especially about the left groin, and pain in passing water, without, however, very frequent desire. The most marked symptom was constipation, and inflation, with hardness, of the abdomen. About the sixteenth of July, Dr. Smith discovered a hard tumor, pyriform in shape, about the size of a small pear, jutting up apparently from the pelvis, somewhat to the left of the symphysis pubis. Castor-oil and some other cathartics were given. These operated moderately. She suffered severely, especially in paroxysms, which were attended with nausea, and sometimes with vomiting. The abdomen was markedly distended all over, and sonorous; very little flatus escaped per anum, and she never felt thoroughly relieved by the stools. Had opiate suppositories every night, without which she could not sleep for pain.

On July twenty-fourth I took charge of the patient again. She looked badly, pale and thin, with a face expressive of suffering. Abdomen full, distended, and sonorous on percussion, all over; below, tender to the touch, particularly toward the left groin. Low down, between the symphysis pubis and left Poupart's ligament, could be felt, rather indistinctly, a somewhat pyriform tumor, which was hard and tender to touch. In this region, also, could be detected an obscure fluctuation.

Finding that the principal symptoms were those of obstructed bowel, depending apparently on the pressure of some growth or deposit in the left pelvic region, cathartics were administered. A pill of blue mass, colocynth, and aloes was tried, but could not be retained. Small doses of the species St. Germain were then given every four hours, and were borne very well. Enemata of flaxseed tea was also given, and at first these operated somewhat, bringing away dark-brown, healthy feculent matter in small quantities, and of the consistence of mush. Only once was there any solid matter observed, and this was composed of a few small, feculent lumps. At this time no flatus was passed, though she felt as though this might be all that was necessary for her relief.

She had now occasional severe pains throughout the abdomen, of a griping character, with much nausea, and with vomiting from time to time. Much soreness in left iliac fossa and in the hypogastric region.

On the 28th, a per vaginam examination was made by Dr. C. D. Meigs.

The uterus was ascertained to be situated low down in the pelvis, and to be immovable, but there was no retroversion, no tumor, nor any fluctuation in the vaginal walls. At this time the whole abdomen was greatly distended; it was tight, tense, loudly resonant above the umbilicus and in the right iliac fossa, while just above the symphysis pubis, and in the left iliac fossa, it was dull, and with a marked sense of fluctuation.

She now grew rapidly worse, and died, after great suffering, on the morning of August 4th.

During the last five days of her life she passed nothing from her bowels except a very little flatus now and then. From the 26th to the 28th of July, the pulse stood at about 140, small and weak; no heat of skin except a very little toward night; no chills nor creepings at any time. On the 28th and 29th July, the pulse fell to 128 and 120, after some good nights, procured by large opiate enemata, and the abdomen was rather less tense in the mornings.

On the 2d August, after a night of great suffering and prostration, Professor Gross saw her with me. At this time the general abdominal distention was very great. From the mesial line outward to the left, and as high upward as the left anterior superior spinous process, percussion was entirely dull, and here, also, there was perfectly distinct fluctuation. Elsewhere the abdomen was sonorous on percussion, and without any sense of fluctuation. Supposing that there might be pus, or an ovarian cyst in this region, we determined to make a puncture. Accordingly, at 5 P.M., Dr. Gross introduced a small trocar to a depth of about two inches, at a point two inches to the right of the anterior superior spinous process of the ilium, and a little below a line drawn horizontally from that process. From the canula there escaped about four quarts of a reddish, citrine-colored, serous liquid. This, on standing, deposited a layer, several lines in thickness, of blood, with a few very small coagula on the bottom and centre of the basin in which the fluid was placed. This fluid had a specific gravity of 1020, coagulated densely with heat and nitric acid, and exhibited under the microscope a considerable number of blood-globules, some of which had ragged, serrated margins; there were also a good many irregularly shaped hæmatoidin crystals.

The operation gave very little pain. The abdomen fell at once to its natural size, without any escape of gas per anum, and now could be perceived in the left groin a hardened mass of irregular outline about as large as a small pear. At the time of the operation the pulse was 140. During the following night the pulse continued at about the same. The patient was very much exhausted, with collapsed features. There was no stool, but the urine was discharged without difficulty.

The next day there was no improvement. In after part of the day, severe pain set in again, which, in the course of the night, became violent in paroxysms. No stool. The night was passed in great misery, with frequent vomiting of a blackish fluid. Death occurred on the morning of the 4th, without any stool, and without any increase of size of the abdomen.

It should be stated that, during the last ten days, a very marked enlargement of the superficial veins of the left side of the abdomen had taken place. When this was first observed, there was no enlargement whatever of the veins of the right side, nor was there any swelling of the left leg. Five days before death there was decided enlargement of the veins of the left leg, with some swelling of the calf, and moderate œdema of the tissues over the left tibia.

As the fluid escaped from the canula, the net-work of enlarged veins on the left side of the abdomen disappeared.

The appetite was dull during the last three weeks, the tongue only moderately furred, and not dry. She took milk-punch, with lime-water and beef-tea. Various kinds of food and drinks were tried, but she liked nothing but mineral water, and for a short time, iced champagne.

The following account of the post-mortem examination was drawn up by Dr. S. W. Gross:—

The post-mortem examination was held on Sunday, August 5th, at 12 o'clock, and was confined to the abdominal and pelvic cavities.

The abdominal walls contained a slight amount of fat, and the body was not emaciated. On opening the cavity of the abdomen, the first fact that struck our attention was the presence of a large, blackish tumor, filling almost completely the pelvic cavity. It required some little force to lift it up, and it was found to be attached to the right broad ligament, its long diameter being placed in the axis of the pelvis, flattening the rectum posteriorly and tilting the uterus forward. It had the shape of the ovary, was five and three-fourths inches long, three and a half wide, and twelve inches in circumference. It was composed of organized clots of blood, which were evidently inclosed in the peritoneal covering of the ovary, the membrane being much thickened at the base of the tumor. The ovary lay imbedded in the mass, was about an inch and a half in length, and one in width, and was very vascular, bleeding freely when cut. There was no distinct line of demarkation between it and the clots. The pedicle was formed by the broad ligament, and was about three inches long. The os uteri was engorged, and the vesical and rectal reflexions of the peritoneum were greatly thickened. The left ovary had undergone cystic degeneration, forming a tumor four inches long, three wide, and nine in circumference. Its walls were greatly thickened and lobulated, and had undergone encephaloid degeneration.

The parietal portion of the peritoneum was almost universally the seat of cancerous tubercles, varying in size from that of a millet-seed to that of a small pea. The visceral portion of the membrane was not so much affected. The greatest seat of these masses was the great omentum, which was loaded with them, and was so much contracted as to be drawn up into the space between the transverse colon and the liver. The suspensory ligament of the liver, the gastro-hepatic omentum, and the mesentery were also greatly involved, and the pancreas was much indurated from the same deposit. The other abdominal organs were healthy.

The peritoneal cavity was circumscribed by adhesions which attached the cæcum, ascending colon, and small intestines to the posterior wall of the abdomen, and to so great an extent did these adhesions exist that the small bowel did not fall into the cavity of the pelvis. The abdominal and pelvic cavities contained about two quarts and a half of bloody serum.

Under the microscope, the tumors taken from the omentum and peritoneum exhibited fibrous tissue and cysts, inclosing simple and compound cancer cells and granules. The cancer juice, which was very abundant, also showed granules and compound granular cells, as well as well-marked and large caudate cells.

Remarks.—The case just described was evidently one of areolar cancer of the peritoneum, in which the peritoneal deposit assumed the appearance of "a hard, crystalline, transparent, and discrete cancerous follicle, resembling tubercle, and of the size of a hemp or millet seed," as it is described by Rokitansky.

The right ovary was greatly increased in size, as mentioned above, by a copious effusion of blood which had become coagulated between the outside of the stroma of the organ and the peritoneal investment. Was this an example of hæmatocele, occurring at the moment of the strain experienced by the patient? It is likely, also, that at the time the strain occurred, the ovary became dislocated into Douglas's cul-de-sac, and this gave rise, in part at least, to the obstruction of the intestine which was the immediate cause of death.

The left ovary exhibited an instance of the second variety of medullary carcinoma of the ovary described by Rokitansky, and which he says "is often, though not invariably, coexistent with areolar cancer of the ovary or of other organs."

An accurate diagnosis was not made during life. The opinion first entertained was that the case was one of pelvic cellulitis in the neighborhood of the left ovary, causing a tumor, with pressure on the rectum, and thus explaining the pain in the pelvis and the symptoms of ileus. Afterward it was thought that there might be a cyst of the left ovary, of very rapid formation, and to test this opinion, and also in view of the possibility that pus might be present, the puncture with the trocar was made.

It is easy to see now that the presence of the small hard tumor of the left ovary, and the subsequent rapid effusion into the left side of the peritoneal cavity, ought, perhaps, to have aroused suspicion of the existence of malignant disease of the peritoneum. But the strict limitation of this effusion in the region of the left iliac fossa seemed so adverse to the theory of peritoneal effusion, as to have prevented such an opinion from being formed. Moreover, the youth of the patient, and her previous very good health, both militated against any such opinion.

ART. IV.—*Effects of Aletris Farinosa.* By J. P. DROMGOOLE, M.D., of Chulahoma, Mississippi.

ALETRIS FARINOSA, also known by the popular names of helonia dioicia, false unicorn-root, star-wort, blazing star, colic-root, star-grass, unicorn-root, and star-root, is a small plant, found in shady and hilly situations in most parts of the United States. It is more generally designated as "unicorn" or "star-root," and for a considerable time it has been held in high repute by many of the officious and communicative old women of the country. Notwithstanding the great variety of names by which it is known would seem to attach considerable importance to its medicinal properties, yet its therapeutical effects are apparently unknown to the medical profession. I have used it very extensively during the past eight years, and its administration has been followed by the most happy effects, in many cases proving itself superior to other remedies. Dr. Bigelow states that he knows of no plant which surpasses it in genuine, intense, and permanent bitterness. From that opinion I partially dissent, as I find it a mild, permanent, and rather pleasant bitter, but not so intense as colombo, quassia, or gentian.

The root, which is the part used, is small and bulbous, extremely hard and flinty, and in its action it is emmenagogue, tonic, alterant, and slightly stimulating. I have found very few physicians who have ever prescribed a dose of it—many never having heard of it.

Considering its valuable remedial effects, and a general ignorance in regard to any medical properties it may contain, I have been induced to call attention to so potent a remedy, hoping others more prominently situated may give it a fair trial. I am confident it deserves a trial, and think it should hold an important place in our pharmacopœia. I have used it successfully in the treatment of amenorrhœa, dysmenorrhœa, leucorrhœa, hysteria, chlorosis, and other diseases connected with the organs of gestation, and have found it to be the most effectual remedy I have as yet employed.

I am not prepared to say that it is a specific or direct emmenagogue, yet its administration has produced results which follow the use of no other medicine. For instance: cases of amenorrhœa of several months or years standing, which have baffled the skill of eminent physicians, and failed to yield to all known remedies, have proved perfectly tractable upon a free use of star-root. For all female irregularities, I find it to be unsurpassed in its certain and efficient effects.

All female or uterine disorders, attended with a feeble atonic condition of the system, particularly call for this remedy. Of course, the remedy will fail in cases of amenorrhœa attended with uterine engorgement, or some accidental or congenital fault of the organ of gestation.

The same may be said of the other diseases above mentioned. A few doses will do no good; it must be used regularly and perseveringly, and it will gradually produce a change in those structures from which the menstruæ flow.

In my hands it has proved more valuable in female complaints than all other remedies combined, and I hope its effects may cause many physicians to hail its introduction with a degree of satisfaction which no emmenagogue has ever yet enjoyed. I generally employ the following combination as the prevailing symptoms indicate its use:—

℞.—Aletridis Farinosæ, ℥xvj;
Fol. Anthemid. nob.
" Buchu,
Rad. Sarsap. āā ℥ij;
Aquæ Bullient.
Best Whisky, āā Ovj.

Bruise all the ingredients well, mix thoroughly, and place in a percolator. Pour on one-half of the water and whisky; let the mixture stand twelve hours, displace, and set the solution aside. Displace the remaining half several times while hot. Mix the two solutions, and by means of a water or sand bath evaporate to one gallon. Dose, one tablespoonful after each meal. It may also be given in powder, in doses of from ℈j to ʒj after each meal.

In feeble constitutions, and where the stomach is considerably deranged, I frequently employ the following compound tincture:—

℞.—Aletridis Farinosæ, ℥iij;
Fol. Buchu, ℥ss;
Rad. Serpentariæ, ℥ij;
Sem. Cardam.
Cort. Aurant. āā ʒj;
Spts. Rectif. dil. Oij.

Bruise, mix, and digest for fourteen days, and filter; or displace. Dose, one tablespoonful half an hour after each meal. If the patient be pregnant, or if there be considerable uterine engorgement, I consider the star-root contra-indicated.

I have never known abortion produced by it, yet such complaints from patients have been made as to induce me to withhold the medicine in many instances.

In order to be certain of procuring a good article, buy the root before being pulverized, as I have often been disappointed in employing it as ordinarily found in drug stores.

In chlorosis I use carbonate of iron in connection with the above, paying strict attention, in all instances, to the secretions, diet, exercise, state of the mind, external applications, and sympathetic affections. At present I am not prepared to say anything in regard to its *modus operandi*, hoping others may, after a fair trial, be induced to point out its more direct physiological effects upon the system.

ART. V.—*A Case of Ovariotomy.* By HENRY MILLER, M.D., formerly Professor of Midwifery in the University of Louisville.

IN a paper read before the College of Physicians and Surgeons of Louisville, and published in the *American Journal of the Medical Sciences* for April, 1859, I gave an account of two cases of cystic ovary successfully treated by excision, and attempted to justify the operation of ovariotomy under certain circumstances. Having recently had another successful case, I now propose to present a brief notice of it.

Mrs. T., forty-eight years of age, consulted me on account of a multilocular degeneration of the left ovary, which attracted her attention as a tumor upwards of a year since, but she had complained of pain in the left iliac region and limb of the same side for several years previously. The tumor, when she came under my observation, had grown to a large size, and invaded all the regions of the abdomen, not excepting the hypochondriac, and almost diagnosticated itself upon the surface by the prominence of the cysts and the depth of the sulci between them.

I operated upon her on the eighteenth of October, in the usual way, by making an incision through the linea alba from the umbilicus to within an inch of the pubes. This brought to view the main cyst, which was punctured, and its fluid contents received in a vessel. The superior cysts were then pressed down by an assistant, and held opposite the abdominal opening, and their fluid collected. Several smaller cysts were opened and their contents allowed to escape at random. After all this depletion the solid textures of the tumor could barely be brought through the incision. The collected fluid measured twenty pints, and the solid remnant of the growth, which was extracted, weighed eight pounds. Allowing that only two pounds of fluid were not collected, which was the lowest estimate made by those who were present, the tumor must have weighed thirty pounds before it was molested.

It was my purpose to have secured the pedicle with the clamp, proposed by Mr. Spencer Wells, but when I observed how large was the main artery supplying it, and how deeply its tissues were congested, I concluded that it would be safer to use a strong ligature of flax, and to secure the artery by a special ligature. The clamp was then applied, with the view of retaining the stump exterior to the cavity of the abdomen, and in this respect only did I depart from the method pursued in my two previous cases. If, when the pedicle is left in the abdominal cavity, the suppuration and sloughing are equal to what I observed on the outside, and there is no reason to suppose that there is any difference, then I am disposed to think that it would be always better to proceed as I did in the present case, for there must be danger when the pedicle is left within the body, not only of peritonitis, but of purulent absorption. The sloughing was not completed until the twentieth day after the operation, when the remnant of the stump was not larger than a cherry, and was retracted within a deep depression, looking like the umbilicus of a newly born child.

The external incision was closed with the interrupted suture of annealed iron wire, and the union was firm and complete in seven or eight days. This was the first time that I had used metallic sutures, and I was not very favorably impressed by them. There was fully as much suppuration along their track as I have been accustomed to see, when sutures of silk or flax were employed, and there was, moreover, a small abscess formed in connection with the suture, next to the umbilicus. This might have been, however, only a coincidence, and I do not feel authorized to decry what others have so much lauded, judging from only a single observation.

No threatening symptoms followed the operation. There was no shock, no tenderness or fullness of the abdomen, nor any fever. Her appetite continued good enough throughout. Her pulse ranged from eighty to ninety in the minute; she slept well, and complained only of a little backache and some pain in the left leg, which readily yielded to a liniment of chloroform. During the fourth week she sat up several hours every day, and walked about the room, and just one month and a day after the operation she returned home, making the journey in one day, partly by rail, and partly by riding in a carriage thirty miles, without inconvenience of any kind.

It is hardly necessary to add that Mrs. T. was placed completely under the influence of chloroform, preparatory to the operation. To the immunity from suffering and consequent shock, thus purchased, I ascribe, in no small degree, the fortunate issue of this, as well as my two previous cases. No consciousness of pain was evinced by her except from the sewing up of the external wound, and she afterward declared that she felt no pain from anything else that was done.

Bi-Monthly Abstracts;

OR, BI-MONTHLY NOVELTIES IN MEDICAL, PATHOLOGICAL, SURGICAL, OBSTETRICAL PHYSIOLOGICAL, AND CHEMICAL SCIENCE.

SURGERY.

BY S. W. GROSS, M.D.,

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I.—*On the Treatment of Aneurism by Digital Compression.*

We have from time to time recorded all the cases of aneurism treated by digital compression, which have fallen under our notice, our desire having been to place the subject prominently before our readers, in order that they might draw their own conclusions in regard to the value of a plan of treatment, which is, undoubtedly, one of the most expeditious and effective modes of bringing about a cure. We have now to add six new cases to those already reported, three being traumatic, and affecting the palm of the hand, two popliteal, and one aneurismal enlargement of the thyroid gland.

1. In the *Oesterreichische Zeitschrift für praktische Heilkunde*, No. 27, 1860, Dr. Winkelhofer describes a case of traumatic aneurism of the superficial volar artery, of the size of a pigeon's egg, and of fifteen days' standing. The cutaneous wound had not united, and presented a gangrenous appearance; the arm was œdematous, and the general condition of the patient was bad. The compression was made on the brachial artery, in an intermittent manner, for several hours every day. From the second day the pulsation became weaker, and had entirely disappeared at the expiration of eight days, when the tumor was hard and painless, and had diminished two-thirds. Eight weeks after the accident there was no trace of the tumor.—(*Gazette Hebdomadaire*, vol. vii. No. 39, 1860.)

2. A year since, M. Verneuil reported to the Surgical Society of Paris a case of traumatic aneurism of the ulnar artery in the palm of the hand, which was cured by digital compression on the brachial artery. We are unable to give any further details of this case.—(*Ibid.*)

3. Professor Herrgott communicated to the Medical Society of Strasbourg, in June last, the history of a case, which may be found in the *Gazette Médicale de Strasbourg*, No. 8, 1860, of false aneurism of the right superficial palmar arch, in which digital compression having proved unavailing, a cure was effected by the ligature. The examples of Drs. Winkelhofer and Verneuil show, however, that compression may be followed by a successful result.—(*Ibid.*)

4. The *Oesterreichische Zeitschrift für praktische Heilkunde*, page 25, 1860, contains an account of an interesting case of popliteal aneurism, under the care of Dr. Giacich, in which digital compression having been made by assistants, without success, the patient succeeded in effecting a cure with his own fingers. The subject was thirty-nine years of age, and perceived the tumor in the right

popliteal space two months previous to his admission into the Fiume Hospital. The digital compression was maintained from twelve to fifteen hours each day. At the end of eight days, the aneurism having undergone no change, and the circulation being accelerated, the patient was bled, digitalis was administered, and cold applied to the tumor. In the intervals of compression by means of the finger, Signorini's tourniquet was applied over the femoral artery. In a fortnight, no material modification having been effected, although the intolerable pain in the ham had ceased, the ligature of the artery was proposed, to which the man would not submit. He left the hospital and resumed his usual occupation, but being attacked again with great pain, he took to his bed, and tried digital compression for about two hours and a half every day.

After having continued this treatment for some time, he again presented himself to Dr. Giacich, who found that the tumor was perfectly obliterated and much diminished in size. The patient had made the compression for sixty-six days, of which fifteen were passed in bed, and it was kept up for one hundred and sixty-five hours. When we add to this the time he spent in the hospital, we find that compression had been exercised during eighty days, for two hundred and forty-seven hours.—(*Ibid.*)

A case somewhat similar to the above was reported by Mr. Colles, in 1854, in which the patient cured himself, without assistance, of a diffuse popliteal aneurism, by intermittent digital compression, in seven days.

5. In a communication made to the Medical Society of Constantinople, Dr. Brunelli related the history of the case of a woman, who, by making digital compression over the common carotid, had succeeded in relieving herself of an aneurismal goitre. The tumor was as large as an infant's head, and the superior thyroïd artery coursed over its upper portion, becoming lost in the gland itself. On puncturing the mass, arterial blood flowed out in a jet, and the tumor almost immediately refilled. Dr. Brunelli taught the patient the mode of compressing the carotid, which was difficult, on account of its being covered by the tumor, rendering it necessary to elevate it and carry the finger very deeply back. The woman compressed alternately the carotid and superior thyroid. At the expiration of five months the tumor had lost its elasticity, was hard and not more than half as large as a hen's egg. Seeing the swelling so much reduced she abandoned the treatment, and no relapse has occurred.—(*Gazette Médicale D'Orient*, No. 5, 1860.—*Ibid.*)

6. Early in November, 1860, Professor Gross had, at the clinic of the Jefferson Medical College, a negro man, thirty-eight years of age, who discovered a small pulsating tumor in the left popliteal space two years previously, which had increased so much in size as to cause the leg to be immovably flexed, and be the seat of severe pain. The knee of the affected side measured seven inches more in circumference than the sound one, and the signs of aneurism were well marked.

The compression was made upon the femoral artery, where it passes over the pubic bone, for about eighty hours, by the members of the class, with the effect of causing considerable diminution of the tumor, and weakening the pulsations. The patient finding the pressure unbearable, the femoral artery was ligated, and the ligature came away on the eighteenth day.

This case should not be considered as one in which the treatment was thoroughly tried, since the pressure, made by so many persons, was very irregular. At the present time the tumor is rapidly diminishing and is perfectly solidified.—(*Medical and Surgical Reporter*, Nov. 17th, 1860.)

II.—*Wound of the Brachial Artery cured by Digital Compression.* By DR. BURY. (Gazette Médicale de Paris, No. 43, 1860.)

Digital compression need not necessarily be restricted to the treatment of aneurism and inflammation of the extremities, as proposed by M. Vanzetti, since it will be seen, from the case of Dr. Bury, that it is equally applicable in hemorrhage, even from a large artery. M. Marjolin has resorted to it successfully in three cases: one being an aneurism of the palmar arch; one a wound of the radial artery in a child; and in the third it was employed for one hour and a quarter, to arrest the bleeding consequent upon the operation of lithotomy. If it does not succeed, no bad result will follow, and recourse can afterward be had to the ligature.

A man, aged thirty-seven, received a blow upon the right arm, on the seventeenth of June, and on the following morning a physician found the limb enormously swollen, and of a violet color, due to the effusion of blood. He made two incisions over the swelling, which were followed by the escape of a large quantity of blood, after which the bleeding seemed to have stopped. In twenty-four hours, the dressings being soaked, he was taken to the Saumer Hospital, and on removing them the blood flowed by jets, and was restrained, but not completely, by compression. For several days compression was employed, aided by agaric and perchloride of iron, used externally and internally, but failed to answer the purpose, and on removing the clots, the blood escaped in such abundance as to leave no doubt of the brachial artery being wounded. The patient was much prostrated, and the condition of the arm and wound rendered it difficult to ligate the artery at the point of injury. The fear of mortification prevented Dr. Bury ligating the axillary artery, and he, therefore, determined to resort to digital compression. On the twenty-second of June, a resident and four sisters of the hospital commenced the treatment by compressing the upper portion of the brachial artery, and it was continued uninterruptedly for sixteen hours. At the end of forty-eight hours the hemorrhage had entirely ceased, but as a matter of precaution the pressure was continued some time longer. Under its influence the pain in the arm was much relieved and the swelling greatly diminished. The patient was discharged on the thirty-first of July, at which time the wounds of the arm had closed.

III.—*Intra-Uterine Dislocation of the Knee-Joint.* By J. YOUMANS, M.D. (Boston Med. and Surg. Journal, Oct. 25, 1860.)

Dr. Youmans met with an interesting case of intra-uterine dislocation of the left knee-joint, in 1859, the patella being smaller than the one of the opposite limb. The mother was conscious of having received an injury two weeks previous to her delivery, in consequence of overreaching while house cleaning. The child, at the time of the report, had perfect use of her limb.

Dr. Youmans relates the case in the following terms:—

"The patient, a laboring woman, under the medium size, was delivered, after a natural labor, of a full-sized, healthy female child, whose left knee-joint was entirely dislocated, so that the toes rested upon the anterior part of the thigh near the groin. As soon as I could leave the mother, I took hold of the limb and brought it to its natural position; but to my surprise, as soon as I relinquished my hold, it flew back, as with a spring, to its former position; it was immediately brought again to its place and held by the hands of the nurse, while I manufactured an apparatus for the occasion. Two pieces of whalebone, one on each side of the limb, were fastened together with three pieces of tape, one passing under the popliteal space, the other two in front, above and below the knee. This served a good purpose for keeping the leg in position, and also occupying but a small space, admitted of cleansing and dressing the child without removal. Some swelling and soreness occurred, and several weeks elapsed before the splints could with safety be removed."

IV.—*New Operation for the Radical Cure of Inguinal Hernia.* By D. HAYES AGNEW, M.D., Surgeon to the Philadelphia Hospital. (Medical and Surgical Reporter, Nov. 17, and Dec. 1, 1860.)

Two cases of inguinal hernia of long standing have been cured by Dr. Agnew's method, one occurring in his own practice, the other in that of Dr. Garretson. The instruments necessary for the operation consist, first, of two semi-cylinders of steel, three inches long and one inch and a quarter in circumference, which can be separated from each other by a screw in the handle of the instrument, and on the internal face of the lower blade of which are two parallel longitudinal grooves. Secondly, of a spear-pointed needle, slightly curved at the extremity, and supported on a bone handle. Third, of several stout needles from two to two and a half inches in length.

A portion of the scrotum is carried into the external abdominal ring, followed by the metal cylinder, and thus thrust up to the internal ring. The blades are now separated by means of the screw attached to its handles, and the long needle, armed with a thread of silver wire, is carried along one of the grooves to the upper end of the cylinder, and then made to pierce the exterior parietes of the inguinal canal; the thread is then removed from the needle, the latter withdrawn, and the other end of the wire passed through its eye, when it is passed along the other groove and made to emerge upon the surface of the skin, a short distance from the first. It is again unthreaded, and after the removal of the needle the two ends of the wire are drawn up tightly and twisted over a small roll of lint. This effectually holds up the plug of integument to the very summit of the canal, and as the silver thread manifests but little disposition to ulcerate out, it may be allowed to remain for a considerable time. The second and most important step of the operation consists in screwing the handles of the instrument completely together, thus separating the blades in the canal to their greatest possible extent, and then carrying across the canal, between the blades, four or five threads, at equal distances from each other. The first thread should be composed of silk, and be introduced as near the internal ring as possible; the remainder should be of silver, and the last one be close to the external ring. These transverse threads can be lodged in the canal with great accuracy by this method, the cord being protected from injury by the posterior blade of the instrument. The latter being withdrawn the patient is confined to his bed, the parts being protected by a compress and roller, and the wires should be removed so soon as the plastic exudation has bound the invaginated plug to the walls of the canal, which, in the cases operated upon, required twelve days.

The patient of Dr. Agnew was fifty-five years of age, who had an oblique inguinal hernia of seventeen years' standing; that of Dr. Garretson occurring in a lad, fourteen years of age, who had been affected with an oblique inguinal hernia, which had descended into the scrotum, since his second year. In both cases the parts remain perfectly invaginated and indurated, and the patients are walking about. The compress is still worn to favor firm consolidation.

V.—*New Osteoplastic Operation upon the Nose.* By Professor B. Langenbeck. (Echo Médical, No. 7, 1860; Gazette Hebdomadaire, No. 40, 1860.)

From a paper on osteoplastic operations, by Professor Langenbeck, published in the *Deutsche Klinik*, No. 48, 1859, we extracted the details of an operation devised by the distinguished Berlin surgeon, for the removal of polyps affecting the nose and pharynx, (see this Journal, p. 702, 1860,) in which it was shown that a portion of bone when separated from its osseous connections could unite, provided it remained adherent by periosteum to the parent bone. In the same communication the author adverted to a case in which he had transplanted the pericranium upon the back of the nose, in order to replace the nasal bones, but in regard to the success of the attempt he entertained serious doubts. Dr. Dor has, however, followed up the case, the history of the first report having been incomplete, and has shown that the fears of Dr. Langenbeck were useless. The result of the operation being interesting, we give an abstract of the case at the present time.

A woman, forty years of age, had suffered for two years with ozæna and perforation of the palate, and complete destruction of the nasal bones and septum. The nose was in consequence sunken in, and the soft parts, which were healthy, were drawn up toward the forehead. The patient denied most positively that she had ever been affected with syphilis, although the disease could be traced to that source. At the time she had a purulent discharge from the mucous membrane of the pharynx, which yielded in four weeks to the iodide of potassium.

The operation was performed on the 17th of November, 1859, by penetrating the cavity of the nose, by an incision made from one wing to the other, thus separating the soft parts from the nasal apophysis, the frontal and superior maxillary bones. The point of the nose was then brought down toward the lip and the semilunar space thus made was filled up by a flap of a similar shape, removed from the forehead. The flap was composed not only of the skin, but also contained the periosteum, and the pedicle was attached near the internal angle of the right eye. The only difference between this and other rhinoplastic operations consisted in including in the flap of skin a portion of periosteum to an extent corresponding with the size of the lost bones. The after-dressing was confined to covering the wound with charpie, and introducing the same substance into the nose, which was, moreover, covered with a compress wet with cold water. On the fifth day the swelling was greater than is usual after such operations, and the wound had almost entirely united by the first intention. On the second of December, when Dr. Dor again saw the patient, the swelling had nearly disappeared, and the color of the skin was normal. There were at this time no signs of exfoliation of the denuded bone. On the sixth of February the bridge of the nose was perfectly firm, and the introduction of a sound into the nasal cavity gave the sensation of true bone. The internal surface was smooth and resistant, and the formation of new bone between the skin and periosteum appeared to have taken place. The cutaneous flap, which was at first excessively tumefied, had returned to its normal dimensions, and, under the microscope, osseous tissue, which did not differ from true bone, was observed. Granulations readily formed on the denuded portion of the frontal bone, a very small portion of which exfoliated.

VI.—*Clinical Report on Epithelial Cancer of the Lip.* By JONATHAN HUTCHINSON, M.D. (Medical Times and Gazette, Nos. 536, 537, 1860.)

This report embraces a statistical analysis of one hundred and twenty-seven cases of epithelioma of the lip, occurring in hospital practice, in all of which operations for the removal of the disease had been performed. The lower lip was affected in ninety per cent. of the cases, the upper in four per cent., and the angle of the mouth in six per cent. From the series, we find that women are subjects of the disease in the proportion of five to every hundred males, and when they are affected, it is most frequent in those who are in the habit of smoking. The average age of the patients was fifty-eight years, the extremes being twenty-eight and eighty-two years. In all excepting about twelve cases was the disease primary.

The results of the operations for the removal of cancer of the lip in one hundred and twenty-seven cases may be summed up as follows: Three patients died of erysipelas within ten days of the operation; in seven, the cancer returned in the wound; nine had a return of the disease in the cicatrix at different periods after the operation; in five the lymphatic glands became affected subsequently; three had the same disease on the opposite part of the lip; and one hundred and five are reported as having recovered from the operation, having left the hospital with sound cicatrixes. Inasmuch as most of the reports were made within a few months of the operation, a sufficiently long period had not elapsed to discover whether the disease had returned in a larger proportion of cases than above indicated.

VII.—*Clinical Report on Nineteen Cases of Epithelial Cancer of the Tongue.* By JONATHAN HUTCHINSON, M.D. (Medical Times and Gazette, Nos. 538, 539, 1860.)

Cancer of the tongue being very rapid in its progress, rarely calls for surgical interference, since the disease is usually very far advanced when the patient is brought under the notice of the surgeon. In all but two of the cases quoted in this report were operations performed, but it is probable that four times as many cases were treated in the hospital during the period to which the report refers.

The average age of the patients was fifty-four, the extremes being thirty-two and seventy-eight In one case the sex is not stated; of the remainder, twelve were males and six females. In two cases, on account of the advance of the disease, palliative measures were resorted to, one patient dying within five months of its commencement, the other within seven months. In seventeen cases the cancer was removed: by the knife in eight, by the ligature in five, and by the écraseur in four. Three of these died, two of pyæmia within seven weeks, and the other in about a month. Ten patients left the hospital with the wound healed, and in four the disease returned either before the wound had closed, or shortly after. Of the cases operated upon in which the duration of the disease is given, it had existed in one three months, in one four months, in one five months, in one eight months, in one a year, in one eighteen months, and in one two years.

In continuing this report, Dr. Hutchinson adds additional facts in regard to the clinical history of epithelioma of the tongue, and, in the *Medical Times and Gazette*, No. 541, 1860, gives a tabular statement of sixteen cases, furnished him by Dr. Humphry. As this contribution is especially valuable, on account of the history of the majority of the cases being complete, we reproduce it here:—

No.	Age & Sex.	Nature and Duration of Ulcer, State of Glands, etc.	Treatment.	Result.
1	F.; 44.	Indurated ulcer at raphé; enlarged submaxillary glands.	Removed by ligature six months after commencement of disease.	Died 14 months after commencement of disease.
2	F.; 60.	Indurated ulcer at hinder part of right margin; glands not affected.	Palliative.	Died 18 months after com. of disease.
3	F.; 68.	Induration of right edge and adjacent part of floor of mouth; glands not affected.	Palliative.	Died 15 months after com. of disease.
4	F.; 23.	Indurated ulcer on the right edge of tongue near palate; glands at angle of jaw slightly enlarged in second year.	Palliative.	Died 3 years and 3 months after com. of disease.
5	M.; 52.	Superficially ulcerated and indurated right edge of tongue; no affection of glands.	Palliative.	
6	F.; 60.	Hinder part of right edge; no affection of glands.	Palliative.	Died 18 months from com. of disease.
7	F.; 54.	Deeply fissured ulcer, size of shilling, on middle of right edge; base indurated to some extent around; eight months' duration; no disease of glands.	Excised, Aug., 1848.	Quite well, March, 1857.
8	F.; 70.	Hinder edge of tongue and pillar of palate.	Palliative.	
9	M.; 66.	Middle of left edge; uneven ulcer on indurated base, size of half penny; four months' duration; no disease of glands.	Excised, March, 1849.	Disease returned as soon as the wound healed; died 9 mos. after operation.
10	F.; 40.	Flat, uneven ulcer on indurated base; middle of left edge of tongue; no disease of glands; three or four months.	Excised, Aug., 1852.	Disease returned in 6 months; died Feb., 1854.
11	F.; 64.	Right side of tongue; no disease of glands; was alive a year after commencement of disease.	Palliative.	
12	M.; 46.	Whole length of left side; five months; enlarged glands.	Palliative.	Died 15 months from com. of disease.
13	M.; 45.	Indurated fissured ulcer on right edge nearer tip than usual; six months; glands slightly enlarged.	Excised.	Well 6 months after operation.
14	M.; 61.	Indurated mass near tip, extending to subjacent tissue; three months; no disease of glands.	Palliative.	Died 20 months from com. of disease.
15	M.; 53.	Ulcerated warty growth on left edge; a few months; no disease of glands.	Excised, July, 1859.	Well now.
16	M.; 54.	Crooked indurated ulcer size of half-penny on left edge nearer tip than usual. caused by a bite nine months ago: no disease of glands.	Excised, Feb., 1859.	Well now.

VIII.—*Case of Recto-Vesical Lithotomy, in which Bozeman's Button Suture was employed.* By J. F. NOYES, M.D. (Boston Medical and Surgical Journal, Nov. 29, 1860.)

A year since we reported a case of recto-vesical lithotomy, in which Dr. Bauer closed the wound with silver sutures, union taking place, by the first intention, in eight days. This favorable result induced Dr. Noyes to apply the wire for a similar purpose—with the addition, however, of the leaden shield—in the case of a man, thirty-nine years of age, who had suffered with symptoms of vesical calculus for three years. As he was much emaciated and prostrated, an effort was made to improve his general health, but nothing being gained by delay, the recto-vesical operation was performed on the 21st of October, 1859. The patient being under the influence of ether, was placed on his left side, with the thighs flexed and separated, and the rectum was dilated with the ordinary speculum. An incision was made through the central portion of the prostate, and enlarged bilaterally sufficiently to allow of the introduction of the index finger, when the stone, which was an inch and a half long by three-fourths of an inch in width, was removed by the forceps. The wound was closed by six silver sutures, and Bozeman's button was adjusted. The apparatus was removed on the twelfth day, and all the wound, excepting a small spot in the centre, was found to have united. A few applications of nitrate of silver had the effect of causing this spot to close by granulation, and at the end of three months the patient had gained about seventy pounds.

IX.—*Five Cases of Neurotomy for Painful Affections of the Limbs.* By REDFERN DAVIES, M.D. (Dublin Quarterly, Nov., 1860, p. 331.)

CASE I.—A laborer, aged fifty-two, sustained a compound fracture of the middle third of the tibia and lower third of the fibula, in consequence of a fall a distance of forty feet. In five months the limb was sound, as far as the fracture was concerned, but he suffered from a severe pain, which commenced during the process of union. His condition on the 20th of November, 1857, about thirteen months after his discharge from the hospital, was as follows: He was tortured with a persistent, gnawing pain, greatly aggravated by motion and by the touch, which commenced on the dorsal surface of the toes, extending over the foot, anterior surface of the ankle and leg as high as the original site of the tibial fracture. From this point it was felt in a line running to the interval between the fibula and edge of the gastrocnemius, and thence descended to the outer ankle and outside of the foot, joining with the pain on the dorsum. The limb was shrunken and flabby; the foot partially extended; the toes flexed, cold, and destitute of feeling. On embracing the leg with both hands and making firm pressure with the thumbs over the first intermuscular space on the anterior surface above the seat of fracture, the pain in the dorsum of the foot and front of the leg was much diminished, the other remaining unaffected. Dr. Davies accounted for the anterior pain by supposing the anterior tibial and musculo-cutaneous nerves to have been implicated by the tibial fracture; the sympathetic suffering between the tendo-Achillis and the fibula, and in the outer part of the ankle and foot being due to the communication between the communicans peronei and external saphenous nerve. To relieve the suffering, an inch of the popliteal nerve was removed, and on recovering from the effects of the anæsthetic, the pain was found to have disappeared, and the limb could be jolted. At the end of three months the progress of the case is thus described:—

"The limb, when in a state of rest, has the toes drawn downward; the foot turned inward, and the heel raised. All power of extension is completely gone; sensation is less acute than on the opposite side, but it is gradually improving; he also perceives himself that the dorsum of the foot and anterior surface of the leg are much colder than the posterior and plantar surfaces; and to the thermometer there is a difference of four degrees in the temperature of the part above and below the division of the nerve; a similar difference exists, likewise, between the temperature of the two legs. Since the operation, there has been no return of pain; and he has this day—February, 1858.—walked, with the aid of a slightly-raised heel to his shoe, a distance of six miles, in perfect ease and comfort."

Case II.—A locksmith, aged sixty-seven, experienced a fracture of the middle third of the thigh-bone, three years ago, which, at the end of twelve weeks, had consolidated, with one inch of shortening. He has been unable ever since the accident, in consequence of the great pain, to put his foot to the floor, or bear any weight on it. Upon examining the limb, October 1st, 1858, the posterior muscles of the leg were found to be atrophied, rigid, and hard; the foot was extended, the toes flexed and apparently immovably fixed, all attempts to straighten them being attended with great suffering; the ankle-joint was free, but motion caused agonizing pain; and the temperature of the limb was five degrees lower than the sound one. In regard to the site of fracture, there was no deformity. Under the influence of chloroform the leg became natural, the muscles of the calf being soft, and the toes resuming their normal condition and being freely movable. As the effects of the anæsthetic passed off, the parts returned to their abnormal state. Under the influence of a freezing mixture, and during sleep, the same phenomena were witnessed. These indications led Dr. Davies to exsect about an inch of the posterior tibial nerve, the operation being performed in the lower third of the leg, as for the ligation of the posterior tibial artery. This was followed by immediate cessation of the pain and a normal condition of the toes. The thermometer indicated no difference in the temperature of the two legs. The patient progressed favorably, and the history of this case is brought up to October, 1860, when he could, with the aid of a high-heeled shoe, rendered necessary from the shortening produced by the fracture, walk about and work, standing about nine hours a day without experiencing the slightest pain or inconvenience.

Case III.—A woman, fifty years of age, received a knife wound, in May, 1858, just below the pisiform bone, since which time she has suffered intense pain, shooting up to the shoulder, whenever the ring or little finger was touched or the forearm was jarred. They were frequently affected with painful twitchings, both during sleep and when awake. All the fingers were semi-flexed, and the last two were cold and clammy. Six months after the accident, half an inch of the ulnar nerve was removed above the pisiform bone, and the fingers could be immediately roughly handled without the production of pain, and they were also warmer than before the operation. Ever since this time she has been perfectly free from suffering, could use the limb almost as well as ever, the only difference being that she could not appreciate slight differences in textures by the touch, or pick up very small objects.

CASE IV.—A laborer, aged fifty-nine, sustained an injury to his left wrist-joint from a fall, in 1845, and five years subsequently his arm was amputated at the upper third. In removing the last ligature, on account of the patient's starting, it was twitched away, and pain instantaneously ensued in the stump. This gradually increased until it became constant; the end of the stump became excessively tender and was intolerable of the slightest pressure. In 1852, the skin was separated from the deeper tissues of the stump by a tenotome introduced subcutaneously. In 1853 and 1857 tumors were removed from the end of the stump, followed by an improvement in the condition of the patient and a relief from pain, which lasted, however, only about six months. In June, 1859, Dr. Davies removed about half an inch of the median, ulnar, and musculo-spiral nerves. This operation was followed for a brief space by good motion of the stump and cessation of pain, but a year subsequently the pains had returned with their usual force.

CASE V.—A sailor, thirty-two years of age, came under the care of Dr. Davies, in May, 1860, presenting the following symptoms: The left foot was cold and clammy and affected with equino-varus, the leg atrophied, and the toes contracted and rigid. He complained of constant pain in the great and second toe , extending along the back of the foot, up the leg as far as the tubercle of the tibia, and relieved by firm pressure made above. He had also pain all over the sole of the foot and heel, following the course of the posterior tibial nerve, up to the popliteal space. This pain he described as attacking him suddenly, lasting from one to twelve hours, and being similar to the shock of a galvanic battery. Six years previously, when on a cruise, he was the subject of yellow fever, and was sick for six months. This was followed by contraction of and pain in the toes, which obliged him to quit the service in 1859. The anterior tibial nerve was divided above the ankle and three-fourths of an inch removed, the result being relief in the big toe and the anterior portion of the leg. Two weeks subsequently, the posterior tibial nerve was dealt with in a similar manner, and with as happy a result, the patient being able to walk about and even strike his foot on the ground. During the operation, a thermometer was applied to the limb, and after the division of the nerve the temperature increased three degrees. The remaining equino-varus was relieved by the usual procedure.

PATHOLOGY AND PRACTICE OF MEDICINE.

BY RICHARD J. DUNGLISON, M.D.,

ONE OF THE PHYSICIANS TO THE PENNSYLVANIA INSTITUTION FOR THE INSTRUCTION OF THE BLIND; HONORARY LOCAL SECRETARY TO THE SYDENHAM SOCIETY OF LONDON, ETC.

I.—*Remarks on Heat-Apoplexy or Sun-Stroke, as observed at Lucknow, in the Hospital of the 1st European Bengal Fusiliers, during the months of May and June*, 1859. By JAMES P. BROUGHAM, M.D., Surgeon to the Presidency General Hospital. (Glasgow Med. Journal, Oct. 1860, p. 372.)

Occasionally in the public services we find medical officers who are willing and anxious to record their observations for the good of the profession; and opportunities are often afforded to them for observing morbid phenomena, which are not available to the mass of the public. Thus, from India, where such rich material is at hand, in regard to the influence of solar heat as a cause of disease, we naturally expect to have much information upon insolation afforded us, and this contribution of Dr. Brougham is a valuable addition to the literature of the subject.

After detailing the symptoms of this disease, such as diminished sensibility, nervous twitchings of the facial muscles, increased heat of surface, insensibility of the pupil to light, involuntary or semi-conscious movements, Dr. Brougham proceeds to state that in the post-mortem examinations made in almost every case of death which occurred in the Fusilier Hospital the following appearances were presented. His observations are of value from his experience and position, and are entitled to credit and consideration.

First. There was invariably a very remarkable effusion of serum, both beneath the arachnoid and in the lateral ventricles, amounting, in some cases, to two ounces; this fluid was also found within the theca vertebralis. There was also much venous congestion about the base of the brain and medulla oblongata. In no case was there rupture of any vessel, or sanguineous apoplexy.

Secondly. The lungs externally were always free from inflammation, except where disease had previously existed; in some few cases a small quantity of serum was found within the pleural sac. The lung tissue, however, invariably seemed much redder than usual, and crepitated on pressure, while frothy mucus exuded abundantly from incisions made into the substance.

Thirdly. There was almost invariably a considerable quantity of serum within the pericardium, and in one instance fresh fibrin had been deposited between the pericardium and serous covering of the heart. The right side of the heart was always engorged with very dark, fluid blood, and the left was empty. No trace of internal disease of this organ was ever seen.

Fourthly. The liver seemed always to contain some excess of blood, but was healthy in structure.

Fifthly. In one case the spleen was enlarged, and was engorged to a considerable extent.

All other organs were in a normal state.

It is impossible to remember the common track of the fourth, fifth, and eighth nerves, as pointed out by Sir C. Bell, and not be struck with the fact of the twitchings of the facial muscles, the working of the fingers about the throat, the difficulty of swallowing, and the accumulation of mucus within the bronchi, the almost inflamed state of the lungs, and not think there is a track of nerve matter the actions of which have become abnormal, irregular, or suspended.

Is the affection of the nerves primary, depending on the solar rays acting on the brain, or secondary, depending on a deranged state of the pulmonary function?

The nerves supplying the lungs are not alone affected; there is entire loss of voluntary motion, or nearly so, and sensation, as he has already stated, has almost gone; the entire nervous system, therefore, suffers. It is certain, he thinks, that this does not depend on the direct rays of the sun, many men who suffered not, having been exposed, others, again, having been seized during the hours of darkness, early in the morning. All, however, suffered alike, with the same moaning or expiration, same want of inspiration, same difficulty of swallowing. The pupil was also fixed, contracted, or dilated, in either case insensible, the heart beating sensibly up to, or beyond the period of death.

Exposure to heat tends to produce venous turgescence, and disturbs the balance of the circulation, partly by its mere physical effect in causing general expansion; but there are other causes which certainly act very differently. The action of the heart is invariably quickened, but with this is marked depression of the animal functions, as shown by listlessness and want of energy, and should the temperature increase, or even remain undiminished, we may expect these effects to become exaggerated, particularly when those exposed have been weakened by previous illness, or are called on to make any violent or continuous effort.

The writer looks on the attack not as the commencement, but as the end of insidious blood poisoning; and though it is then that the lungs begin to suffer more directly through the brain, it is because that organ has been supplied with blood not fitted for nutrition, so that it becomes embarrassed in its functions, or these are entirely suspended; in either case the impression produced is apt to increase and proceed to a fatal termination.

II.—*On the Non-Prevalence of Pulmonary Consumption in the Hebrides, and along the Northwestern Coast of Scotland.* By JOHN E. MORGAN, B.A., Oxon. (Brit. and For. Med.-Chir. Review, October, 1860, p. 483.)

The result of inquiries made personally and by letter, in the region of country extending between the island of Mull in the south, to the whole of the Hebrides, and extreme portions of the northwestern coast of Scotland, is detailed by Mr. Morgan to exhibit the rarity of tubercular consumption in those localities. The replies elicited from physicians settled there testify with singular unanimity to the same fact. The conditions under which the people lived, their modes of living, their dress and diet, and their domestic life, are all referred to, but even though some of the peculiar circumstances of that district of country are believed by the medical men residing there to account sufficiently for the exemption from phthisis, yet the observations of the writer do not confirm that view. He finds other countries similarly situated physically and in every way, but suffering far more from tubercular disease of the lungs.

Some of the points detailed in regard to the habits and occupations of the people are interesting, and worthy of being mentioned, because practitioners there consider them as influential causes of the non-prevalence of phthisis. They live in a mild, equable, moist climate, deficient in sunshine; their summers are cold enough for fires, and their winters are too warm for continued snow and ice; shrubs like the azalia japonica and fuchsias flourish in the open air in winter, if partially screened from the wind. The majority of the natives are fishermen, as well as cultivators of a small piece of land, and are naturally much exposed to the weather, sometimes passing a great part of the night at their trade. The articles worn are woolen externally, while the under-garments are cotton; and from May to October the women and children go barefooted.

They live on meal, potatoes, milk, and fish, and at certain seasons almost wholly on oat-cake and porridge; the first containing very little oleaginous matter, and not, therefore, preventing phthisis by supplying an oleaginous diet. The amount of ozone in the atmosphere is very great, but as that is a fact also observed always near the sea, whether the district of country be very subject to phthisis or but little so, it may not have much weight as a preventive cause.

The highlanders of the Hebrides are a mixed race, the Celtic element being very apparent, and there is no reason for believing race to have much influence. The huts or cottages in which they live are of very rude construction, yet the system of ventilation is very efficient. The scrofulous diathesis is frequently met with notwithstanding, yet not often accompanied by tubercular disease of the lungs.

It looks, therefore, as if some special cause of protection to the lungs existed, and Mr. Morgan thinks the use of peat fuel of a very good quality is sufficient, when inhaled in such quantities by the inmates, to act as a shield to the lungs. The smoke accumulates in the houses, and is breathed constantly. If the inhalation of different substances, and among them tar, be a valuable mode of treatment in cases of phthisis, the view here expressed would seem a plausible one, for the amount of tar in the peat is very considerable.

III.—*A Case of Leucocythœmia.* By DR. GEORGE SHEARER, Resident Physician, Royal Infirmary, Edinburgh. (Edin. Med. Journal, July, 1860, p. 48.)

A young man, aged twenty-four, a miller by trade, admitted to the infirmary under the care of Dr. Gairdner, affords an interesting illustration of leucocythæmia. Three weeks elapsed from his admission to the time of his death, and "the following is a summary of the facts of the case in regular sequence: Anæmia, languor, and debility; epistaxis; headache; bleeding from the gums; renal pain, with lithiasis; febrile symptoms; disappearance of lithic acid, and appearance of lithates and albumen; diarrhœa; reappearance of lithic acid; uncontrollable epistaxis; hæmatemesis; otitis; exhaustion and death."

The crystalline deposit in the urine, on the third or fourth day after admission, consisted mainly of hexagonal crystals of lithic acid, with a few of the ordinary rhomboidal crystals. These, we have already said, afterward disappeared. Post-mortem examination revealed leucocythæmia, enlarged spleen, fatty liver, petechiæ on the mucous membrane of stomach and on the serous surfaces of the pericardium and endocardium.

The case detailed by Dr. Shearer gives him a field for reflection, which he discusses in the following suggestions :—

1. Enlargement and activity of the spleen is not the only condition involving increase of the white corpuscles, there being at present a case in the infirmary in which this condition of the blood coexists with enlargement of the whole lymphatic system of glands, without any detectable enlargement of the splenic organ.

2. The fact of a great excess of white corpuscles in the blood in cases of leucocythæmia being accompanied by constant diminution of the red discs, appears to militate against the theory put forward by Wharton Jones, and supported by Bennett and others, that the latter are derived from the former by liberation of their included nuclei; for, according to their theory, increased activity in the formation of the white ought, *pari passu*, to be attended by increased development of red discs, while the reverse is the case. Comparative increase of the white corpuscles is seen in a variety of organic diseases, especially chest affections; but it also occurs in dysentery, diarrhœa, paraplegia, etc ; in all of which one general condition was observed, viz., depreciation of the appetite, and emaciation. These facts, Dr. Shearer thinks, point to the blood itself as the primary source of origin of the red discs, and in the diseases mentioned there is either a deficiency of nutritive pabulum taken into the blood for the production of the red corpuscles, or these are rapidly melted down to supply the elements of the discharge. In leucocythæmia, again, the nutritive pabulum is appropriated for the formation of the white corpuscles, the blood being thereby impoverished to the extent to which these are increased; development of the red discs is consequently kept in abeyance, and anæmia is again the result.

3. The deficiency of color in the urine and the salts obtained from it depends probably upon the same cause as the pallor of the general surface, viz., deficiency of red globules and hæmatin in the blood.

4. Careful study of the deposit of lithic acid seemed to warrant the inference that the common or lozenge-shaped crystal is derived from the perfect hexagonal form by shortening of the lateral planes of the latter; but this does not explain the formation of the true rhombic crystal, which is an irregular form.

5. Hemorrhage from various mucous surfaces forms a prominent feature of this disease, and may depend partly upon the increased tension maintained in vessels by the absolute increase of volume in the mass of the blood, and partly upon the imperfect nutrition of the walls of the capillaries from the inferior quality of the blood for histogenetic purposes.

6. The white corpuscles, we know, are closely allied to fibrin in composition and character; fibrin is increased in febrile and inflammatory diseases, and accompanying this is an increased elimination of lithic acid, or lithates, by the kidneys. Can any relation exist between the lithuria present in this case, and the increase of white corpuscles in the blood?

IV.—*The Leprosy of the West Indies.* By R. Sweeting, M.D., etc. (Medical Times and Gazette, September 1, 1860, p. 208.)

We have here the result of the observations of a resident of the Bahamas, upon a disease which has elicited much discussion at various times, and especially with a view to the question of alleged identity with the leprosy of the ancients. The analysis of symptoms as detailed by Dr. Sweeting is as follows: General cachexy of the system, lasting for months or years perhaps, before any appearance of cutaneous disease, the features assuming a sickly and repulsive aspect, the face being slightly mottled, and the backs of the hands congested. These, and other symptoms which show it to be of constitutional origin, are followed by an affection of the skin, beginning about the lower lobe of the ear, with a pendulous enlargement of that structure. The face becomes covered with innumerable elevations of the skin, consisting of hypertrophy and induration of the true tissue of the dermis, throwing out a watery and semi-purulent secretion, which, incrusting, gives a dirty-white appearance to the surface, and the face becomes a mass of irregular elevations which gradually end in ulcerations.

The disease, so far as the skin is concerned, is almost limited to the hands and face. The majority of leprous patients die of phthisis. Leprosy is not a contagious disease, and no patient in the hospital has ever been attacked with it from association with cases suffering from that malady. The general opinion of its origin is, that it arises from the want of sufficient change in the food of the poor. Dr. Sweeting suggests that, like the bronchocele of Alpine valleys, it is in some way due to an imperfect dietary continued through generations under certain climatic conditions. In regard to treatment, where leprosy is fully developed, one treatment is about as good as another, and about as useless. Solutions of chlorate of potassa sometimes do good. In the incipient stage, relief is often obtained from a varied and generous diet, warm clothing, and from the remedies which experience has proved to be so useful in common lepra and psoriasis.

V.—*Contributions to the Pathology and Therapeutics of Typhus Fever. On the Identity of Typhus and Typhoid Fevers; community of Origin.* By Joseph Bell, M.D., one of the Physicians and Clinical Lecturers, Royal Infirmary, Glasgow. (Glasgow Med. Journal, October, 1860, p. 300.)

This paper is one of a series of valuable observations upon typhus fever, described by one who has had abundant opportunities for studying its pathological phenomena and lesions. After showing in the previous number of the journal that both forms of fever, the typhus and typhoid, were really identical in their symptoms, at least so far as the term identical is applicable to the symptoms of disease, and that the intestinal lesions in both forms of fever were essentially the same, differing merely in the degree of intensity and extent, he proceeds now to adduce evidence that the facts mentioned prove unquestionably that the two forms of fever have a common origin, and that the objections which have been brought forward against this conclusion are perfectly untenable, and founded on obvious fallacies, bold assumptions, and misrepresentations.

Dr. Bell supports the doctrine of the identity of typhoid and typhus fevers upon the threefold basis of the similarity of the symptoms during life, the essential resemblance of the intestinal lesions after death, and the community of origin. The last topic forms the subject of the present paper; we regret that its length will prevent us from giving more than a condensed synopsis of it.

Numerous instances of both forms of fever exist, occurring in the same family and at the same time and in the same bed, and the experience of Dr. Stokes* is appealed to, who says: "We have frequently observed, in cases where a large number of a single family have been successively attacked by contagious fever, that every form of the disease, from the most malignant typhus to the mildest typhoid fever, may be presented by different members of the family." A number of interesting cases are detailed by Dr. Bell in confirmation of this fact. The objection which the advocates of non-identity urge is, that these cases are rare; but this limitation of their experience does not disprove numerous observations of many other competent observers.

Then comes a discussion of the question of "foci of infection," and of the views of Jenner and Murchison. The former attempts to show that typhus and typhoid fever arise from different foci, that each has its own specific cause, or morbid poison, as essentially distinct as that of measles is from that of small-pox, etc. But he takes for granted the very subject to be proved, and assumes that as typhus and typhoid are different diseases, they therefore must require for their production the application of distinct specific causes.

Dr. Murchison's theories differ from those of Dr. Jenner; but the consideration of their peculiarities would occupy too much space. We may merely sum up the remarks of Dr. Bell after a number of pages devoted to the discussion of objections to them. Dr. Bell thinks that both these writers have most signally failed in their object; that their arguments consist of a series of fallacies; that their references are incorrectly quoted; and that their conclusions are untenable. Therefore, the facts which he has brought forward from the experience of Stokes and Huss, and from his own observation, will not admit of any of the explanations suggested by the theories of Drs. Jenner and Murchison, but remain as cogent teachers of the community of origin in both forms of fever.

In conclusion, he examines very briefly another argument which has been brought forward by almost every advocate of the non-identity theory, to prove that typhoid and typhus fever must arise from totally distinct causes:—

1. It is alleged that patients laboring under typhus, when admitted into a fever hospital, have been attacked with typhoid fever during their convalescence.

2. It is asserted that patients who have passed through the typhoid form have been attacked, after partial or complete recovery, with typhus. From these circumstances the conclusion is deduced that the two forms of fever must arise from different poisons, and consequently are non-identical in their origin.

A careful examination into the circumstances connected with such cases will at once show that such a conclusion is quite illogical, that the real facts connected with such instances clearly indicate a community of origin. In other words, he proves from their own premises and facts that typhoid and typhus are not dissimilar diseases, but are identical in character and origin.

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* Diseases of Heart, p. 450.

VI.—*Case of Rheumatic Fever with Endocarditis, treated without Depletion or Mercury.* By H. H. Raymond. (Med. Times and Gazette, September 1, 1860, p. 230.)

In a case of acute rheumatism, accompanied by cardiac inflammation, Mr. Raymond remarks that he could get from the patient no history of previous disease; but the sudden and violent onset of the heart affection made him suspect it, and the suspicion in a great degree directed the treatment. It subsequently turned out that when a child she had had an acute attack of rheumatic fever. The treatment, consisting in the total absence of depleting agents, and in the use of sedatives and nourishment, was pursued solely on the merits of the case as it stood. Although the rheumatic affection was most acute, there was that about the patient which gave plain warning against bleeding and mercury, and indicated an opposite course. He thought that if the heart mischief could be checked and life supported, she would probably get well. Blisters, both over the heart and the joints, were followed by marked relief; and in each case he adopted the plan of using a number of small ones instead of one large one, as he considered them just as efficacious and less irritating. Opium produced no effect whatever, while henbane was of great service from the very first dose.

His object, he states, in publishing this case, is not to point to it as one treated on any system, as he believes that the systematic treatment of diseases is the ruin of medicine. The stimulants were by no means urgently given, but solely with the view of keeping up the action of a heart that was laboring under the difficulties of disease, which, as he rightly conjectured, were partly recent and partly of old standing. The only sound inference from this and similar cases is, not that the stimulating plan is always the right one for rheumatic fever, but that there are instances in which it is the only method of saving life.

OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

BY WM. B. ATKINSON, M.D.,

LECTURER ON OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

I.—*Obstetric Statistics.* By T. T. Smart, L.R.C.P., of Edinburgh.

The number of cases was 5026. Face presentations, 7, born dead, 2; face to pubis, 20, dead, 6; hand with head, 3, dead, 1; shoulder, 3, all dead; hand and arm, 23, dead, 11; breech, 66, dead, 18; prolapsus of funis, 22, dead, 13; footling cases, 62, dead, 29; placenta prævia, 9, dead, 3, from exhaustion; forceps used in 32, dead, 13, all the mothers did well; craniotomy, 14; face presentation, 1; funis and vertex, 3; convulsions, 1; vertex, 9, three mothers died; puerperal convulsions, 18, died, 3; plurality of children, 72 cases, two distinct membranous sacs in each case, 16 distinct placentæ, 56 with but one placenta, all the females did well; hydatids, 1; acephaloid, 1; congenital encephalocele, 1 dead born; 1 case of deficiency of arm; imperforate anus, 1; hare-lip and cleft palate, 3; spina bifida, 3; os occipitis deficient in 1; frontal and part of parietal bones deficient in 1; deaths of mothers, 11.—(*Lancet*, Oct. 13, 1860.)

II.—*The Placenta and Membranes in Twin Pregnancies.* By Dr. SPAETH, of Vienna.

The statistics of Dr. Spaeth cover 126 cases, in 49 of which each child had a distinct placenta, chorion, and amnion; in 46, the placentæ were united, but the chorion and amnion of each were distinct; in 28 the placentæ were united, and but one chorion existed, but each had a separate amnion; in 2, the placentæ were united, and there was but one chorion and amnion. In cases of united placentæ, frequently the line of junction was indicated by a depression on the concave surface and by scanty deposits of fibrin. Even in cases of single chorion the dividing line was present. In no case where the chorion was single, was there the slightest indication of a fusion having occurred between two distinct membranes. At the level of the line which separated one amnion from the other, the chorion was always perfectly smooth, without thickening or depression. Where each chorion was distinct, but the placentæ united, the vessels were always independent and presented no anastomoses. But in two cases where the amnion was single, vascular communication existed between the two placentæ; in 17 of the 28 cases where a single chorion enveloped two amniotic membranes, vascular connection was found between the placentæ. These anastomoses were formed by large branches placed superficially on the inner face of the placenta. Hence, in the majority of cases where the placentæ are united, and where the chorion is single, there is free communication between the vascular system of the two placentæ. The anastomoses occur sometimes from vein to vein, and sometimes from vein to artery. In one case an anastomosis existed between an artery of one fœtus and a vein of another.—(*Zeitschrift der Gesellschaft der Aerzte zu Wien; Gaz. Hebdom.*, Aug. 24, 1860.)

III.—*Induction of Premature Labor.* By WM. THORN, M.D., of London.

Mrs. H., a very small woman, has been pregnant six times. Craniotomy was performed at term three times. The fourth pregnancy was terminated at seven months by rupturing the membranes, and giving a dose of ergot; but the child was born dead. Considering this result as due to the ergot, on the fifth occasion he brought on labor at the seventh month by the use alternately of the hot and cold douche, and rupturing the membranes. The child was quickly born and survived only a short time. Regarding the plans followed as wrong in some way, he endeavored so to induce the necessary premature delivery, that the process of natural labor might be imitated in its steady and gradual approach; his idea being that the deaths in the two former cases arose from the children being pressed too rapidly through a narrow and deformed pelvis. He, therefore, carefully removed, at about the seventh month, perhaps a week earlier, the plug from the os uteri, thus inducing a slight show. He then gave what he "knew to be a capital emmenagogue, viz., half a drachm of the biborate of soda, three times daily. At the end of sixteen days, no other action being perceptible except some slight uterine pains now and then, *the membranes ruptured spontaneously*, and the patient was easily delivered of a healthy male child, likely in every sense to do well." The only remarks he would make are, that he believes the satisfactory termination of the labor, and the safety of the child, are entirely due to the very gradual induction of the delivery, and that the biborate of soda fully answered his expectations in every respect.—(*Lancet*, Aug. 11, 1860.)

IV.—*Persulphate of Iron in Post-Partum Uterine Hemorrhage.* By G. MENDENHALL, M.D., of Cincinnati.

In the case mentioned, all had gone well, when about ten minutes after delivery, the attention of the physician was attracted to the pallor of the patient, and the uterus being found distended, frictions were employed, which produced a temporary contraction. Ice was then used internally and externally, but the hemorrhage continued. Brandy and other means were employed as necessary, but four hours after delivery the hemorrhage continued steadily. The introduction of the hand rather increased it, and ergot was given with apparently little effect. A catheter was then introduced up to the fundus uteri, and about three ounces of the persulphate of iron (a saturated solution) were injected into the womb. This was retained as far as possible, no pain being produced, and the contraction was increased but slightly. Coagulation of the blood occurred in the uterus and vagina, and from that moment not another drop of fresh blood was discharged from either. Reaction came on, and the patient recovered without a bad symptom. For the next forty-eight hours the discharge was composed entirely of the disintegrated blood, which was succeeded by a serous, or sero-mucous discharge, colored by the salt, and which gradually became of the natural color of the lochia after the cessation of the presence of the red globules of the blood. It would seem to be applicable to post-partum hemorrhage where great relaxation of the uterus is present; in cases of hemorrhage accompanying abortion in the early months, and in excessive menorrhagia.—(*Cincinnati Lancet and Observer*, Nov. 1860.)

V.—*Rupture of the Uterus during Labor, in connection with Disease of the Cervix and Muscular Tissue.* By EDW. L. ORMEROD, M.D.

The patient was thirty-six years of age, large and well made; had borne seven living and five dead children at term, and had also miscarried at the sixth month in the previous year. The first stage of her labors was always tedious. She had never suffered from uterine hemorrhage; it was not known whether she had habitual leucorrhœa, or had ever had syphilis. Three months prior to her death she was seized with seeming labor-pains, which continued severe for twenty-four hours, accompanied with a very free offensive discharge. This all ceased, and she went on well till a fortnight before her death. Labor then seemed to set in. She had a succession of regular pains, day and night, and at the outset an abundant discharge, which continued, though less in quantity. Nine hours before death the pains became more severe, and suddenly, after about three hours, she became collapsed, all uterine action ceased, and she died in an unconscious state. There was no external hemorrhage, upon examination. In the peritoneal cavity lay the child, a full-grown female, and the uterus was found to be torn straight down the posterior wall from fundus to cervix, the vagina not being implicated. The cervix was somewhat encysted, so that what seemed to be the os uteri was really a part of the canal of the cervix, occupied, in four-fifths of its circumference, by an elastic growth of a gelatinous appearance and studded with little bladders. The entrance to the uterus would not allow the passage of a cone of more than one inch and a half in diameter. The muscular substance of the uterus was soft and flabby. The pelvic dimensions were normal. There was no fatty degeneration anywhere.

A vertical section of the mass in the interior of the cervix showed a structure of a honey-comb appearance, from a number of irregularly cylindrical cells, distended with a clear mucus. The whole mass was nearly three-quarters of an inch thick, and the bladders seen were the protruding ends of some of these dilated mucous follicles.

The disease seems to have been simple hypertrophy of the glands of the cervix, with fibrous degeneration of the adjacent muscular structure. It was not the bulk of the tumor which caused the obstruction, but the rigidity of the tissues about the orifice of the womb. This condition had apparently existed several years, increasing till the rupture occurred by the fruitless efforts to overcome the resistance. When did the rupture occur; and how? It would seem to have been gradual, for it is inconceivable that such an injury, and so much hemorrhage, (five pints of blood being found in the peritoneal cavity,) could occur suddenly without proving immediately fatal.—(*Lancet*, September 29, 1860.)

VI.—*Nineteen New Cases of Eclampsia of Pregnancy, Labor, and Puerpery, and its connection with Bright's Disease.* By DR. KRASSING.

Dr. Krassing gives the following summary:—

Of the patients, 11 were from 18 to 25 years of age, 5 from 26 to 38.

Eclampsia occurred in the proportion of 1 in 500 labors. Primiparæ were more frequently attacked.

There were two cases of twins.

The attacks came on mostly without premonitory symptoms; ten times during dilatation of the os uteri; once during an attempt at turning, the os being dilated; five times during the puerperal period—three times on the first, one on the second, and one on the eighth day.

In the 10 cases occurring during dilatation, pregnancy had reached its normal term in 4; the eighth month in 4; the ninth in 2. The others occurred at the regular period of labor.

The number of attacks ranged from 1 to 81, and the period of pregnancy or of puerpery had no influence on the frequency.

The duration of the individual attacks varied from 1 to 3 minutes, only seldom attaining 10 minutes. Premonitory symptoms appeared in 6.

In one case only was albumen absent from the urine. In all the rest there was evidence of Bright's disease. Œdematous infiltration occurred 10 times. In one case without œdema, there occurred 81 fits; in one without albuminuria, 60 fits.

Seven recovered, 9 died. Of the recoveries, 4 had convulsions during labor, 3 during puerpery. Death happened twice during convulsions, five times during coma, and twice from after-diseases.

Dissection of 9 cases exhibited: anæmia and serous soaking of the brain, 6 times; hyperæmia, 1; intermeningeal apoplexy, 1; nothing abnormal in brain in 1. Hyperæmia and inflammatory exudation in kidneys, 3 times; fatty degeneration, 4; atrophy, 1; no disease of the kidneys, 1; œdema of lungs, 4; peritonitis, 2; stenosis of the right ureter, 2; tubercles in lungs, 1.

One breech, and the rest head presentations. Of the 18 children, 10 were boys, 8 girls; 15 born alive, 3 dead.

Treatment.—There were 5 bleedings to the extent of 10 ounces; 3 of these ended fatally, and in one there was a manifest increase of the attacks. Chloroform, inhaled in 6, mostly moderated the attacks. Opiates were given by the mouth and rectum 10 times, in large doses, until the accession of sleep, and did good service. To excite diuresis, lemon-juice, tartaric acid, and gum benzoin were given. Cold wraps and douches were applied to the head.

Forced delivery was not resorted to; but of the 10 cases of the dilatation period, the labor in 4 was hastened by the introduction of a flexible catheter; in 1, colpeurysis; in 4, dilatation with the fingers; in 6, the forceps; in 1, turning; in 1, perforation; in 1, the Cæsarean section was employed during life.—(*Monatschr. f. Geburtsk.*, Mai, 1860; *Brit. and. For. Med.-Chir. Rev.*)

VII.—*On a Puerperal Epidemic at the Wurzburg Obstetrical Establishment.*

By DR. O. VON FRANQUE.

This institution, which is under the care of Scanzoni, has been but recently established, and is placed in a healthy, airy position. It averages 360 pregnant women, and from 350 to 360 births annually. The epidemic occurred during February, March, and April, 1859. In this period there were 99 deliveries; the forceps were applied 4 times, and turning was resorted to once. 30 of these cases were attacked with puerperal fever, and 9 died. One of the women died of phthisis, and one of eclampsia. Of the 102 children born, 8 were dead, and 9 died subsequently. Premonitions of the epidemic were met with at the close of 1858, in the form of mild peritonitis, etc. About this time, irregularities in the parturient process were frequent, consisting in deficiency of pains, irregular spasmodic contractions, and rigidity of the os uteri. In some of the fatal cases this last condition caused excessive prolongation of the labor, which itself powerfully predisposes to the disease. Almost all had more or less considerable hemorrhage, the uterus remaining soft and large, showing no disposition to contract.

Puerperal affections exhibit themselves under two principal forms, viz., with hyperinosis of the blood, and with primary dissolution of that fluid. The latter form was only observed in any considerable degree in two cases, which were very acute—both fatal. It is remarkable that the most acute of all the cases, in which death occurred within twenty hours after delivery, was seized in April, when the epidemic was declining. The cases connected with a hyperinotic state of the blood were less rapid. The first appearances of disease were manifested on from the second to the fifth day, commencing either in the form of a localized endometritis or peritonitis, or of the two together. There were 28 cases of this form—7 proved fatal. In one of the 7, puerperal mania occurred.

The treatment consisted in local cataplasms, mercurial frictions, warm baths, and small doses of calomel and opium. The post-mortem appearances were a large relaxed uterus, with the cervical portion softened, and its inner surface lined with diphtheritic or gangrenous deposit; fibro-purulent exudations in the abdominal cavity; enlarged spleen; and a dark, fluid blood in all the veins, the heart, and the cerebral sinuses, exhibiting, hence, the signs of a dissolved condition of the blood, the result of the continuation of the diseased process.

In the milder cases cataplasms only were employed, and phosphoric acid given with the beverages; local bleeding, and especially warm baths, being resorted to only when the local pain proved excessive. In the majority, ten to twelve days sufficed for the treatment. There were also cases of febrile action without special local manifestation, and others in which, with a moderately rapid pulse, more or less prostration and malaise, there was an abnormal enlargement of the abdomen without pain on pressure. The involution of the uterus was performed with remarkable slowness. All these cases recovered.

One remarkable fact is, that in certain cases of labor, during the height of the epidemic, where, on account of difficulty and delay, or exhaustion, the worst prognosis was given, no ill effects resulted. In fact, during such an epidemic, individuals not predisposed to puerperal disease, may undergo most terrible labors without being attacked, while others, with a normal labor, fall victims to the disease.

The influence extended to the fœtus and child; all who were born dead, or died soon, exhibited a diseased condition of the blood, of which they had become the subject while *in utero*. The blood was dark and fluid, the spleen enlarged, and the umbilical arteries often contained pus.

No other cause could be assigned for the epidemic than the prevalence of certain atmospheric influences. Miasmatic influences could not have been generated within the walls of an establishment so newly built and well contrived, and not overcrowded. Moreover, puerperal diseases prevailed at the same time in Wurzburg and its vicinity, which were not, it is of importance to observe, treated by the physicians of this institution. To this may be added the greater prevalence of hemorrhages, and the greater mortality from puerperal diseases at this time. An influence which has often proved very mischievous in lying-in-hospitals during epidemics, viz., the presence of numerous male individuals, did not come into operation here. Individuality, too, exerted no influence; for the feeble and strong were alike attacked. In fact, the fatal cases occurred among the most strong and powerful women, while the feeble suffered comparatively little.—(*Scanzoni's Beitrage*, band iv. pp. 238–249; *Med. Times and Gazette.*)

VIII.—*Creosote Vaginal Injections in certain forms of Puerperal Fever.*

By Dr. MACKENZIE, of London.

For a number of years, Dr. Mackenzie has employed injections of creosote of the strength of ♏viij—xij to the pint of mucilage, in that form of puerperal fever which originates from the absorption of morbid secretions from the vagina, etc. He quotes a case where delivery was effected by destruction of the child, after which all seemed well; but the next day the abdomen was found to be swollen, and there was much pain over its whole surface. A dose of castor-oil and turpentine was given, and followed by a mixture of tinc. opii, gtt. v, with ammoniæ sesquicarb. gr. v, every four hours, and an injection of creosote was thrown into the vagina. The day following, but slight improvement being manifested, a saline antimonial mixture was given in place of the opium and ammonia, and warm fomentations were applied over the abdomen; the injection having been repeated, another day brought a change for the better, the treatment being continued; and in the course of some two weeks she was discharged from the hospital perfectly well.—(*Brit. Med. Jour.*, March 3, 1860.)

IX.—*On the Continuance of Ovulation during Pregnancy.* By Prof. Scanzoni.

Prof. Scanzoni enters into some speculations concerning the continuance of ovulation during pregnancy. His opinions have been recently contested by Kussmaul. Scanzoni argues, that since the bursting of the Graafian vesicle and its consequences are entirely the result of the menstrual hyperæmia of the ovarium, and that the latter can differ greatly, the conclusion must be granted that the menstrual prolegomena are not always or necessarily connected with the bursting of the follicle which embraces a ripe ovum. He reasons ingeniously to prove that although he is unable to show fresh-burst Graafian vesicles in pregnant women, yet there are strong grounds which render it more than probable that there persists a periodical ripening of ova during pregnancy, although without bursting of the follicle. But the reasoning is essentially speculative, and takes too little account of opposing facts.—(*Beitrage*, band iv., 1860; *Brit. and For. Med.-Chir. Rev.*)

X.—1. *Treatment of Menorrhagia.* By Geo. S. Morris, M.R.C.S.

In answer to an inquiry concerning the treatment of menorrhagia, where the usual remedies, viz., ergot, steel, quinia, and rest, have entirely failed, Dr. Morris recommends very strongly the use of gallic acid in five-grain doses three times a day. With this article he has never failed in curing his patient.

2. *Ibid.* By R. B. Newhouse, M.R.C.S.

Dr. Newhouse makes a similar suggestion, urging the use of the gallic acid in the same dose during the menstrual flow, and between the periods small doses of nux vomica, strychnia, or quinia with hydrochloric acid.—(*Lancet*, Nov. 1860.)

XI.—*Cancer of the Uterus.* By M. Aran, of Paris.

Deep-seated cancer of the uterus is situated in the cellular tissue of the fibres of that organ. In any form, it makes for itself a cavity by displacing the neighboring muscular fibres, which, with the mucous membrane, are generally healthy. Soon new deposits occur, and then these tissues become atrophied and disappear. The morbid matter softens, the tissues ulcerate, and the hardness and projections are replaced by irregular excavations with jagged edges, and bathed by a sanious fetid fluid.

Superficial or mucous cancer commences with hypertrophy of the papillæ and follicles of the mucous membrane; but we may have it either continuing thus as a *vegetating* cancer, or in other cases it may become of the *ulcerating* variety. It first appears most generally in the form of very fine mammillated projections, like shot or sand, which may be either hard or soft. The epithelium is not destroyed, and in some cases it forms foliated lamellæ separated by furrows. In others the epithelium may accumulate and form polypiform tumors. In this, especially, vascularity abounds, causing frequent and profuse hemorrhage which soon exhausts the patient.

The *ulcerated* form may be circumscribed or diffused. It is rarely primitive, most commonly following the other forms. Even in the vegetative form, when it appears to have an outward tendency, the cancer extends into the subjacent tissue by the multiplication of epithelial elements, and also determines the deposition of epithelial tumors in the subperitoneal cellular tissue, or in the uterine appendages, as well as in the vagina, bladder, and rectum. When ulceration of the surface of the cancer has commenced, a similar process is set up in the more deeply-seated and distant deposits, and fistulous communications are formed between the different organs.

These two forms of cancer do not possess the same amount of danger. The deep-seated is more grave, in infecting the system more rapidly and being less accessible to local remedies. The superficial may be advantageously treated by caustics. One case was thus cured five or six years ago, and is yet living. Death occurs less frequently than when other organs are affected; the most common causes are peritonitis, inflammation of the psoæ muscles, or phlegmasia alba from obliteration of the veins. In some cases the uterus may be compressed by the tumor, and dilatation occur above the point of pressure; hydronephrosis or distention of the kidney by urine takes place, resulting in uræmic phenomena.—(*Gaz. des Hôpitaux*, Sept. 11 and 13; *Brit. Med. Jour.*)

XII.—*Treatment of Inflammatory Affections of the Female Breast.* By W. H. BYFORD, M.D., of Chicago.

After fully describing the character, of these affections, Professor Byford comes to their treatment. He arranges that for inflammation of the nipples under the heads of prophylactic, palliative, and curative. The nipple must be prepared for its duties. The causes operating upon it produce abrasions, and their action is facilitated by the natural and acquired tenderness of the structures, particularly the epidermis and skin. Hence these must be hardened. The nipple should be covered lightly during pregnancy and nursing; the thinner and more permeable the covering the better. It should freely admit the air. At the same time the organ "*should be subjected pretty constantly to moderately rough friction.*"

An excellent dressing for the nipples for the last two months, is a rough, coarse sponge, so cut as to cover the areola; surround and cover loosely, but touch every part of the nipple. Over this there should be but one thickness of clothing, so as to allow of the evaporation of fluid as fast as secreted, and the free admission of air. In cold weather, of course, the parts should be covered more when going out. The nipples should be occasionally moistened with water, and allowed to dry slowly; friction with a dry towel or the fingers will assist.

During lactation, the same rules should be observed, and after nursing, the nipple should be wiped clean and dry before being covered. A little glycerin or olive oil will prevent cracking. When inflammation comes on, palliatives and curative measures are demanded. The healing process being continually interrupted by the performance of the functions of the organ, it is necessary to protect the part from the effect of these interruptions.

Artificial means are required, which intervene between the mouth of the child and the nipple. For this purpose the shield must be employed. This should be made in the form of a conical hat, having a rim, a crown cavity, with a draught tube rising out of the top for the passage of the milk. This rim should be large enough to cover the areola, the crown passing over the nipple, merely touching it on the sides. If the abrasions are on the summit of the nipple, the shield should be so deep that, when drawn, the top of the organ will not touch, or else it will cause pain. But if the cracks are on the side or base of the organ, then the cavity of the shield must be shallow, so that the top of the nipple touches its bottom in such a manner as to prevent any stretching, and to bring the pressure entirely on the top. In this latter case, the bottom of the cavity should be as smooth as possible, and correspond in shape to the summit of the nipple, in order to prevent unequal pressure. A soft linen rag, properly adjusted over the draught tube, is preferable to any other envelope.

M. Legroux mentions the following ingenious contrivance. He applies this mixture:—

℞.—Collodion, p. xxx;
Ol. Ricini, p. ss;
Ol. Terebinth. p. jss.

This is quite adhesive, and dries less quickly than collodion, on the areola with a brush, so as to encircle, but not touch, the nipple for the width of an inch. While yet soft the nipple is covered with gold-beater's skin, which is pressed well down upon the mixture. Thus is formed a smooth and pliant covering. Holes are pricked through the skin with a needle, to allow of the passage of the milk. Before sucking, this must be moistened with sugar and milk.

The curative means for sore nipples are various. The same will not do for abrasions as well as ulcerations. Nature is to be imitated by forming a cuticle for the part.

Abrasions may be covered with starch and mucilage. The following is a good mixture:—

℞.—Cerat. Alb. ℥ij;
Ol. Amyg. Dulc. ʒj;
Mel. Despum. ℥ss. M.

Dissolve with gentle heat, and add Bals. Canad. ʒijss.

Apply each time of nursing. When the cracks are deep, close them by pressing their edges together, and covering with collodion in a thick and wide coat; this must be renewed when found necessary. When ulceration exists, it will be acute or chronic. Act as for this affection elsewhere; deplete, if acute, by leeches, and apply cold emollient poultices; or envelop the nipple in a thin layer of thick mucilage, covered by oil-silk, so as neatly to fit the organ, kept cold by ice applied in a bladder. When these remedies are not necessary, apply mucilaginous and bland ointment applications. Alum and tannin are good at first; sulphate of zinc and borax come next in respect to time. One scruple of tannin to one ounce of rose-water, five grains of alum, or sulphate of zinc are useful in the early stages, when the acute symptoms are subdued.

The following are useful:—

℞.—Sodæ Subborat. ʒss;
Glycerin, ʒij;
Aq. Rosar. f℥jss.
M. Use as a wash after sucking.

℞.—Sodæ Subborat. ʒij;
Cretæ Præp. ℥j;
Spt. Vini,
Aq. Rosar. āā f℥iij.
Mix and dissolve.

The latter may be used when the ulcer is becoming indolent. In the chronic form strong astringents and stimulants become necessary. A skillful use of the sulphate of copper and nitrate of silver will shorten the course of these ulcers. The latter applied solid to the surface, not oftener than once in eight days, is excellent. In the interval the sore may be dressed with tannin or alum in solution, When irritable, an ointment may be used, made of belladonna, hyoscyamus, or opium. One very good expedient, which will often entirely change the character of the ulcer, is to anæsthetize the part with ice, as practiced prior to operating.

When the lymphatic glands become affected, antiphlogistic measures must be employed; and when chronic, alteratives, tonics, liniments, etc., according to the peculiarities of the case. The treatment of milk abscess is of great importance. It should be prevented if possible, by proper management at the outset. When the nipple is deficient, or, from any cause, prehension is deemed impossible, it is decidedly improper to attempt nursing. In other cases, prolonged and judicious efforts should be made to render the organ useful. The first thing is to take perpendicular pressure off the top of the nipple, by some device to prevent the dress from forcing it in, and this, if possible, should be commenced early in pregnancy. For this purpose a shield should be employed, which will cause a pitting of the anterior surface of the breast, and a projection of the nipple. When called upon to treat a rudimentary nipple, after parturition, the effect must be more prompt. In many cases the organ may be made available by causing it to erect itself by simple titillation by the finger, and immediately applying the child; or by placing a thick layer of collodion, around it on the areola, which, drying, elevates the nipple. Then, by keeping the reservoirs empty, abscess is prevented. To aid in this we have various tubes and pumps, but all of which are objectionable. A puppy is often used, but it likewise is liable to irritate and excoriate the nipple.

The only proper way is by the mouth of an adult, varying the pressure or force to suit the tenderness of the part.

A very useful class of measures are those to suppress the secretion, and thus relieve the distention, as opium in large doses, or applied as an ointment; but belladonna seems to have acquired most renown. Numerous instances are reported of its great value in such cases. Much depends upon its strength and application by inunction till the production of its characteristic effects upon the system. Cold, as a local remedy, is beneficial. The temperature of the breasts for this purpose should be kept steadily at about 40 or 45 degrees, as by water running through an india-rubber bag enveloping the organ, or the application of a bladder. No bad effects are to be apprehended from it. Internally, a saline cathartic may be given every other day, and two grains of iodide of potassium every four hours will materially assist.

Acute inflammation, the effect of congestion, is apt to be extensive, and will require energetic treatment. Warm fomentations may be applied for the first few hours with the hope of establishing the secretion of milk. A decided venesection will often turn the balance in favor of resolution. Immediately after this, the use of the veratrum viride may be commenced in doses of six drops every four hours, till the pulse is brought down below the normal standard, and then kept there. One grain of calomel, with a quarter of a grain of sulphate of morphia, may be given, if the pain is urgent, say every four or six hours. A lotion of one part of sulphuric ether to two parts of alcohol will be a good soothing adjunct, after the inflammation becomes permanent. These measures should not be abandoned for warm poultices until suppuration is clearly evident, by which plan we may often limit the extent of this process. In this state of the gland, the most moderate means only should be employed to draw the breast. Retained milk is not the cause of inflammation here, as in milk abscess. If glandular inflammation is complicated with that of the reservoirs, the treatment for both must be combined, as local and general antiphlogistics with means to arrest the secretion and empty the reservoirs. Chronic inflammation will be cured by treatment similar to that for other glandular inflammations, as leeches, mercurials, iodine, and vegetable alteratives, internally and externally. Much reliance can be placed upon well-regulated and graduated pressure with adhesive straps, pressing the diseased part against the ribs; or with collodion thoroughly incasing the breast. When pus forms, evacuate it early, though where the abscess is deep, it is desirable to wait until the pressure from within has caused condensation of the overlying tissues, otherwise a large opening will be required. In milk abscess the earlier and smaller the opening the better. The effect of suppuration and evacuation of a milk reservoir is often to destroy its cavity, but in some cases a milk fistula is formed. This may be closed by an occasional application of the nitrate of silver. Worse than these are the tortuous lacunæ, that sometimes result from the deep glandular abscess of the breast, and which are generally very difficult to cure. Injection of iodine is most to be relied upon. This may be done by inserting a soft, flexible catheter to the bottom of the canal and throwing the injection through it so as to apply it without dilution to the bottom of the fistula. This favors the shallowing instead of the narrowing of the cavity. Of course it is never advisable to slit up these obstinate puriferous ducts, because of the amount of tissue that might be damaged, which it is desirable to save.—(*Chicago Med. Exam.*, Sept. 1860.)

XIII.—*Urticaria as a Symptom of Irritation of the Female Sexual Organs.* By PROF. SCANZONI.

Prof. Scanzoni observes that though it has been long known that chronic affections of the female sexual organs are not seldom accompanied by skin diseases, yet the influence of a more sudden irritation of these organs upon the cutaneous surface is not so well established. To render this more positive, he relates a number of cases. A lady, aged thirty-four, was ordered a slight leeching of the vaginal portion of the cervix uteri for a chronic metritis. In ten minutes after the application had been made, the patient was attacked with violent fever and slight delirium. In half an hour her skin was found to be of a scarlet red, and the next day numerous urticaria appeared over her whole body. Two days after, the eruption disappeared and desquamation took place. On four different occasions the leeches were applied as before, without this result, but on the fifth, a similar train of symptoms followed, and that so rapidly, that no room was left for doubt as to cause and effect. A second case, aged twenty-eight, had chronic uterine infarctus; leeches were applied to the cervix; they had scarcely taken hold before she was attacked with violent abdominal pains, fever, and a profuse eruption of urticaria. A third case occurred in precisely the same manner. These cases admit of no other explanation than that the irritation of the uterine nerves from the bites of the leeches caused an unusual disturbance of the vascular system, which gave rise to the eruption. In proof that these phenomena were not a consequence of any poison conveyed by the leeches, it is to be observed that such symptoms never result from the application of leeches to other regions, while even very slight irritation of the sexual organs, as by the finger or speculum, or caustic, will often produce erythema of the face, neck, breast, etc., which disappears as rapidly as it comes on.—(*Wurzburger Medicin. Zeitschrift*, band i.; *Med. Gaz. and Times.*)

XIV.—*Affections of the Hip-Joint in Consequence of Uterine Disease.* By DR. HOPPE.

Two cases are reported, one unmarried, forty-five years of age, the other a widow, aged thirty-six, both of whom had been suffering for a long time from a disease of the womb and an affection of the hip-joint. The symptoms of the latter malady are: 1st. Pains which occupy the whole of the thigh, especially in its anterior and exterior aspect, or only in the circumference of the trochanter; they are very intense, lasting through day and night, with very short intermissions. 2d. Contraction of the adductor muscles and of some of the flexors. Both symptoms are referable not so much to an affection of the joint itself as to an irritation in its neighborhood; this becomes more likely by the fact that there exists no deformity about the nates. As a further proof that the named affection was owing to a disease of the womb, Dr. Hoppe remarks that he has frequently observed painful sensations around the trochanter in connection with uterine disease. These patients complained of a sensation of pressure and burning in the region of the trochanters, which diminished gradually, and finally disappeared under a treatment adapted to the disease of the womb. The author points to a fact more generally known, viz., the occurrence of gonalgia as a consequence of affection of the womb.—(*Pr. Ver. Ztg.*, N. F. iii. 2, 1860; *Amer. Med. Times.*)

XV.—*Shortness of the Umbilical Cord.* By M. DEVILLERS, of Paris.

M. Devillers, in his lecture on this subject before the Academy of Medicine, offers the following signs as indicating this condition prior to delivery:—

A sudden decrease or cessation of the motions of the fœtus at a period approaching the end of gestation, in accidental shortening or less extended movements during a great part of pregnancy, and especially near its termination in natural shortening.

Occasional premature uterine pains.

Continued elevation of the fundus of the uterus at the moment of labor, and in females in whom the pelvis is well formed, and the infant presents in a normal manner.

During the whole labor, a tension, a rigidity of the walls of the uterus, even between the pains, and until the expulsion of the fœtus. Sometimes a pain felt at a fixed point in the fundus at the moment of contraction. The presence of the umbilical sound on one or more points of the surface of the uterus, above all, after the rupture of the membranes, but only in cases of accidental shortening.

Often a slow progress of the labor with successive feeble uterine contractions in the case of very decided shortening, without any other apparent cause. Terminal pains very perceptible, and as if repressed in the last moments of labor.

Signs of suffering of the fœtus at an advanced period of labor, especially when the parts of the fœtus are deeply engaged in the pelvis. Often a quick termination of the accouchement, and preceded or accompanied by a slight hemorrhage.

The danger of the natural shortening does not become apparent until the close of labor; while that of the accidental form is seen sooner, and arises principally from compression of the cord.

Finally, compression is a cause of danger to the infant more frequent than is generally believed.

Relative to the treatment, M. Devillers recommends frictions with belladonna to the neck of the uterus, with the design of modifying the resistance of the walls and orifice of the uterus; and also that the physician may seek to disengage or relax the cord; or, if that is not practicable, to cut it, and bruise the fœtal extremity, and finish the accouchement as quickly as possible. He rejects *version* as irrational and dangerous, and prefers the forceps.—(*Gazette Médicale*, Nov. 1860.)

PHYSIOLOGY.

BY S. WEIR MITCHELL, M.D.,

LECTURER ON PHYSIOLOGY IN THE PHILA. MED. ASSOCIATION.

I.—*On the Physiological and Therapeutical Properties of the Peroxide of Hydrogen.* By DR. BENJ. W. RICHARDSON.

This substance, which was discovered by Thénard in 1818, is, in fact, water charged with oxygen in the active state. In his paper, Dr. Richardson took up the following points: The history of the substance; its preparation with special regard to pharmaceutical applications; its physical and chemical properties; its relations to ozone; its physiological properties; its therapeutical value.

It was obvious from the author's description that some obstacles lie in the way of the use of peroxide of hydrogen for medicinal purposes, owing to the difficulty experienced in its manufacture. This difficulty, however, Dr. Richardson greatly simplified, and we should infer that any experienced pharmaceutist could supply the medicine after a short acquaintance with the process of making it, as readily as quinine or other remedial bodies. In preparing it, time and care are the most important requisites. It was shown, indeed, that if perfectly pure peroxide of barium were supplied to the profession, every practitioner in the country could make his own solution of oxygen as he might want it.

The description of the chemical and physical properties of peroxide of hydrogen was unusually interesting. Passing over the facts relating to the influence of inorganic bodies upon it, those bearing on organic matter strike one most forcibly. Thus blood freed from fibrin absorbs the oxygen from the peroxide, and if it is venous blood it becomes arterial, with a rise in the temperature. Washed fibrin and cellular tissue in the fresh state evolve the oxygen; albumen, urea, gelatin, fibrous membrane, and skin produce no change. Grape sugar, and indeed all the sugars brought in contact with it, become decomposed and evolve carbonic acid. Starch undergoes the same modification.

These observations refer to animal substances recently used; but when putrefaction has commenced, then the oxygen of the peroxide seems to act on all alike, and to produce rapid disintegration.

Another curious fact relating to the peroxide was, that its oxydizing power was easily prevented by the presence of certain bodies having a wide extension of names, but analogous characters. Ammonia, in vapor or solution, tobacco, hydrocyanic acid, solution of aconite, and, in short, all the narcotics that are miscible with water, possess this neutralizing property; the permanency of the result being decided by the physical character of the agent employed.

The section of the paper on the relations of the peroxide of hydrogen to ozone was an interesting one, and indicated a careful study of this debated question. It is clear that Dr. Richardson looks upon the two bodies as one and the same. If he has any doubt, it is to the effect that in peroxide of hydrogen there is not any affinity at all between the two elements, hydrogen and oxygen. We pass the matter over to dwell on the physiological actions of the peroxide. These seem to arrange themselves into the following brief propositions. A weak solution oxydizes blood; but this effect can be stopped by the action of the alkaloids and of narcotics. The peroxide supports the life of fishes; but the body of the animal causes rapid evolutions of the gas. The solution injected into the left side of the heart of an animal restores the irritability, but appears to have an opposite effect on the right side. Injected into the arterial system immediately after death, it seems to restore to the muscles the power of contracting on the application of an irritant. It suspends to a considerable extent post-mortem rigidity, and it reduces spasmodic action, excited by such bodies as ammonia and hydrocyanic acid. On the therapeutical value of this powerful agent, Dr. Richardson did not dwell long; but reserved this essential point for another communication. He showed, however, that as an antidote to the alkaloidal poisons, as an external application to decomposing sores, as an internal remedy in fever, where the patient literally dies from deficient oxygen, and in diabetes, the medicine might be used with the best promises of success. In the way of a pleasant acid drink, one could give, said Dr. Richardson, to the typhus-stricken man, one hundred cubic inches of active oxygen per hour. In diabetes, one fact had been made out also by the author, that under the influence of the peroxide, the quantity of sugar at once became less, and the excretion of urine decreased in a relative degree. After illustrating his paper by experiment, Dr. Richardson concluded by stating that on placing it on the annals of that society, he would guard himself once and for all from any exaggerated suggestion as to the value of this new remedial agent. The subject, indeed, was so novel, that after twelve months study of it, he had feared to use a sentence that had been considered over and over again. He did not pretend to know all the properties of the peroxide. He did not bind himself invariably to any opinion offered on this present occasion; nay, experience might show that the substance discussed, in a medicinal point of view, took new and even different directions from those with which he had opened the argument. His own intentions and objects would be served if he did but call forth investigation and fact, let the course of events bend in whatever way they might.

Dr. Thudichum expressed an opinion that the peroxide of hydrogen, as made by Thénard's process, could not be altogether freed from chlorine, and suggested that the substance should be made by the simple sulphuric acid process. He also dwelt on the fermentation theory in relation to certain of the effects of the peroxide. He expressed a disbelief as to the existence of "ozone."

Dr. Lankester asked Dr. Richardson whether oxygen, as it was liberated from the solution, was in the active state, and Dr. Richardson having answered in the negative, Dr. Lankester proceeded to defend the ozone theory. He believed with the author of the proposition, to use the peroxide of hydrogen as a medicine, that great therapeutical effects would come from it. He suggested experiments to determine whether the amount of excreted matters—such as urea and carbonic acid—would be influenced by the administration. It was a remarkable fact, that so powerful a substance should so long have remained uninvestigated as a medicinal agent.

Dr. Garrod compared the chemical effects of the peroxide of hydrogen with the effects of the permanganates. He had tried the permanganates in diabetes, but he thought only with the effect of increasing the amount of sugar. He would wish to hear whether the physiological effects of the peroxide and of a permanganate were the same. It might be that the saline character of the latter produced a difference.

Dr. Richardson, in reply, said that in regard to the presence of a trace of chlorine in the solution, it made no difference; for the effects of chlorine-water were very analogous, and it might turn out ultimately that a direct relationship could be traced between chlorine and oxygen. Thus water, boiled free of oxygen, and charged very feebly with chlorine, would, as he should show on another occasion, support the life of a fish longer than the water altogether destitute of oxygen. In respect to ozone, he had no doubt that such a substance existed, and he was inclined to think that it was a modification of oxygen. He thought that in testing the effects of the peroxide of hydrogen, it were best to try it in disease without any further intermediation, selecting for its trial extreme diseases, such as were not at this time amenable to treatment. The actions, *physiologically*, of the peroxide of hydrogen and of the permanganates were entirely different; the latter, injected into the veins of a horse, produced permanent fluidity of the blood, and transformed the blood on the arterial side to the venous color. The difference depended on the fact that in the permanganate the oxygen was combined, while in the peroxide it might be considered as virtually free.

Dr. Garrod, Dr. Radcliffe, and several other Fellows observed that they should be anxious to give the peroxide a fair trial as to its therapeutical value; and inquiry was made as to the means of obtaining the solution.—(*Lancet*, October 20, 1860.)

II.—*On the Functions of the Cœliac and the Mesenteric Plexus.* By PROFESSOR BUDGE.

Numerous experiments of extirpation of the cœliac ganglia and the mesenteric ganglion were performed on rabbits. The animals generally died within twenty-four hours after the operation; in a few cases death did not occur till the third day. The effects of the operation, briefly reviewed, are: 1. Softening of the fæces, so that frequently no consistent mass is found in the rectum, but only a completely soft mash. 2. Increased motion of the bowel. 3. Elimination of tough, glairy mucus and blood. 4. Enlargement of the liver. 5. Manifestation of pain and suffering, unless the splanchnic nerve had been previously cut.—(*Nova Acta Acad, caes. Leop.—Car. Nat. Cur.*, xix. pp. 257–284, 1860; *American Medical Monthly*, October, 1860.)

III.—*A Contribution to the Chemistry of the Supra-renal Capsules.* By DR. SELIGSOHN.

The following experiments were undertaken in the Laboratory of the Pathological Institute, at Berlin, with a view to establish the discovery by Vulpian and Cloëz (Comptes Rendus, September, 1857, p. 340,) of taurocholic and hippuric acids in the supra-renal capsules. The method pointed out by these observers was adopted in my investigations.

A pound of the supra-renal capsules of the ox having been carefully cleaned and comminuted, was macerated for several days with diluted alcohol, after which the alcoholic solution was filtered and evaporated. The addition of water to the completely evaporated mass caused the separation of fatty matters. The watery solution was evaporated to the consistence of a syrup, and absolute alcohol was added. The residuum thus obtained was dissolved in water to be tested for leucin; the precipitate produced in the red-colored solution, by the addition of basic acetate of lead, was separated by filtration, and the excess of lead in the filtrate was removed by sulphuretted hydrogen. In the fluid freed by filtration from sulphuret of lead, and evaporated to the consistence of a syrup, only cubic crystals (NaC) were observed on miscroscopic examination, but no leucin was discovered. The alcoholic solution filtered from the supposed residuum of leucin was evaporated to the consistence of a thick, brown syrup, which, when dissolved in water, manifested an acid reaction. This solution, mixed with an excess of hydrated oxide of lead, (to the removal of the acid reaction,) was anew evaporated to dryness; the dry mass was then boiled with 65 per cent. of alcohol. From the warm filtered alcoholic solution, which was of a dark-brown color, the excess of lead was removed by means of sulphuretted hydrogen; from the yellow fluid separated by filtration from the sulphuret of lead, crystals were deposited after long repose in the cold, which exhibited the following behavior toward reagents. They dissolved readily in ether, and, on evaporation of the menstruum, separated partly in the form of fine needles, partly as scales. They dissolved with difficulty in cold water, which, however, exhibited a distinctly acid reaction. Under the microscope the crystals presented the form of fissured rhomboidal tables; some of them having been warmed in a test-glass with concentrated hydrochloric acid, the crystalline coating which formed on the sides of the glass exhibited the same form as the original crystals.

Their microscopical and chemical behavior, as well as the formation of the sublimate, put it beyond a doubt that crystals of benzoic acid had in this case separated, while the properties of the crystals obtained by Vulpian and Cloëz, by a similar mode of proceeding, agree essentially with those of hippuric acid.

To the fluid separated from the crystals, an excess of powdered chalk was added, to prevent the possibility of decomposition, (on evaporation in the water bath before the addition of carbonate of lime, the fluid became turbid, while fumes of sulphuretted hydrogen at the same time escaped,) and the former was thereupon evaporated to dryness in the water bath. The dry residuum was strongly warmed with diluted alcohol, the alcoholic filtrate again evaporated, and then heated with concentrated hydrochloric acid, in order to resolve any taurochloric acid, which might have been present, into tauric and choloidinic acid—the crystalline mass thus obtained dissolved with the formation of a residuum apparently agreeing with choloidinic acid; which, however, on the application of Pettenjoker's test, did not exhibit the characteristic coloration. But in the solution the presence of sulphur was clearly demonstrated; moreover, the characteristic crystals of taurin separated on evaporating the solution in the air.

The incinerated constituents of the residuum of the supra-renal capsules obtained after maceration in alcohol, in which no uric acid was discovered, were:—

1. Constituents soluble in water:—

Phosphate of potash.
" " soda.
" " lime.

2. Constituents soluble in hydrochloric acid:—

Phosphate of iron.
" " lime.
" " magnesia.

With reference to the color reaction of the supra-renal capsules, I would, in conclusion, observe that after the application of very dilute hydrochloric acid to their substance, the filtered clear solution assumes a beautiful red color on the addition of ammonia in excess; after the evaporation of the excess of ammonia the solution again becomes colorless.—(*Virchow's Archiv*, Band xviii, 3 and 4 Heft, p. 355, and *Am. Med. Monthly*, October, 1860.)

IV.—*Presence of Sugar in the Liver.* By DR. HARLEY.

Dr. Harley has re-examined the subject of the presence of sugar in the blood and the liver. He disputes entirely Dr Pavy's conclusions, and, with slight exception, agrees throughout with M. Bernard. It will be remembered that Dr. Pavy attempted to show that the existence of sugar in the liver was due to post-mortem changes. To prove this he froze parts of the livers of animals instantly after death had been caused by pithing, intending thus to suspend the action of the causes which he supposed to be active after death and to give rise to the production of sugar. The parts which remained unfrozen were found to contain sugar, those which had been promptly frozen contained none.

Dr. Harley gives in detail the experiments which he made when following throughout Dr. Pavy's plan. He arrived at quite opposite conclusions, however, and ascertained most positively that the production of sugar is not a post-mortem result. Dr. Thudichum had already contradicted another portion of Dr. Pavy's results, and had shown one of the fallacies which had led that chemist astray. We quote in full the latter part of Dr. Harley's paper which contains his general conclusions and his objection to one of the opinions of M. Bernard.

"The only point now remaining was to determine quantitatively the increase in the amount of sugar in the liver after its removal from the body, and for that purpose we preferred operating on an animal fed on a mixed diet.

"Experiment 7.—A small dog, which had been previously fed on an animal diet, received a full meal of bread and milk. Five hours after, the animal was killed, and a portion of the liver rapidly sliced off, and immersed in a freezing mixture. A ligature was placed on the portal vein, and its blood collected before the circulation had ceased. On examination, this blood was found to contain a small quantity of sugar, derived no doubt from the food. Bernard, I believe, has erred in supposing that all the saccharine matter found in the animal organism is formed out of the glucogen produced in the liver. This no doubt is the case in the carnivora, where the diet is restricted to food inconvertible into sugar in the alimentary canal, but cannot be regarded as the natural state of things either in the omnivora or herbivora; for the food of the latter not only contains sugar, but its amylaceous elements may be converted into that substance in the process of digestion. The sugar found in the bodies of animals fed on a mixed diet ought therefore to be regarded partly as the direct product of the food and partly as derived from the glucogen formed in the liver.

"Bernard's chief argument against this view is founded on the fact that the livers of dogs fed on a mixed diet contain no more sugar than those fed on purely animal food. In my opinion, however, this fact is not sufficient to decide the question; for as the liver does not store up sugar, the quantity it at any time contains is no criterion of the amount produced in it. Moreover, the sugar derived from the food need not be expected to be found in the liver. Had Bernard gauged the sugar present in the blood, instead of that in the liver, after each kind of diet, the result obtained would, I believe, have led him to a different conclusion. This being a point of great practical importance in the treatment of diabetes, I may be here permitted to mention that I have occasionally found nearly twice as much sugar in the blood of an animal using a mixed diet as in that of one feeding on flesh alone.

"To return to the last experiment: about two hours after the death of the animal, portions of the frozen part of the liver, and of that which had been kept warm in the body of the animal, were carefully weighed, and the proportions of sugar they respectively contained estimated by volumetric analysis.

"The portion of frozen liver was found to contain 0·333 per cent., and that of the other 1·55 per cent. of saccharine matter. It is thus seen that in two hours the sugar in the liver had augmented nearly fivefold. As Bernard has shown, the simple washing out of the liver, by passing a stream of water through its vessels, would remove all the sugar anteriorly formed. On placing it again aside for a short time, a fresh portion of sugar would form in it at the expense of the glucogen: 0·333 per cent. of sugar seems a small quantity; but if we suppose a liver weighing, as in man, not less than fifty ounces, to contain 0·333 per cent., above seventy grains of sugar would be present in it at the moment of death—no very insignificant quantity, when it is recollected that sugar is removed from the liver at every pulsation of the heart, to be partly consumed, and that it is as continually supplied by the organ.

"The results of the experiments now related do not therefore in any way countenance the notion that sugar is not produced in the healthy animal body. On the contrary, such conclusions as they afford are altogether in favor of the generally received views upon the subject.

"From the preceding experiments the following conclusions may be drawn:—

"First. Sugar is a normal constituent of the blood of the general circulation.

"Secondly. Portal blood of an animal on mixed diet contains sugar.

"Thirdly. Portal blood of a fasting animal, as well as of an animal fed solely on flesh, is devoid of sugar.

"Fourthly. The livers of dogs contain sugar, whether the diet is animal or vegetable.

"Fifthly. Under favorable circumstances saccharine matter may be found in the liver of an animal after three entire days of rigid fasting.

"Sixthly. The sugar found in the bodies of animals fed on mixed food is partly derived directly from the food, partly formed in the liver.

"Seventhly. The livers of animals restricted to flesh diet possess the power of forming glucogen, which glucogen is at least in part transformed into sugar in the liver—an inference which does not exclude the probability of glucogen (like starch in the vegetable organism) being transformed into other materials besides sugar.

"Eighthly. As sugar is found in the liver at the moment of death its presence cannot properly be ascribed to a post-mortem change, but is to be regarded as the result of a natural condition."—(*Lancet*, September, 1860.)

V.—*On Muscular Poisons.* By M. CLAUDE BERNARD.

There exist other poisons which equally destroy the vital properties of the locomotive apparatus, although a totally different histological element becomes the seat of disorganization. We allude to the toxic agents which abolish contractility in the muscular tissue; you will find them infinitely more numerous than those which confine their action to the nerves. Among this class of bodies, digitalis and upas antiar* have already been mentioned; and the attention of American physiologists has lately been drawn by Drs. Hammond and Mitchell, of Philadelphia, to the properties of two other substances which are known by the Indian names of Corroval and Vao. Their action is similar to that of upas, although of greater intensity. The active principle of the veratrum album or veratrine, a substance now frequently employed in practice, also exerts its influence upon the muscular fibre, to the exclusion of all other tissues; and a large number of poisons, with the chemical composition of which we are imperfectly acquainted, evidently belong to the same class.

The small arrows now placed before you were forwarded to us by M. Boussingault. These weapons are extensively used in South America. The nature of the substance with which they are impregnated is still a mystery to us; they are supposed to have been charged with woorara, but their action is of a totally different kind; the muscular, not the nervous, fibres are affected by the wounds which they inflict. Although unable to state in a positive manner what this poison really is, I am tempted to believe that the venom of toads is the substance employed. The Indians of New Grenada are known to make use of a small variety of this animal, which is found in great abundance in that country, for the purpose of poisoning their weapons. After collecting a large number of toads, they impale them upon wooden spits and roast them alive. The heat causes the animal to eject its venom, in which the arrows are dipped. This latter substance is known in fact to exert a most powerful action on the muscular tissue. But the unknown principle with which these arrows are impregnated differs so completely in its properties from those usually attributed to animal poisons, that we shall seize the present opportunity to enter into some considerations on the subject of venoms in general, and that of the toad in particular, our conclusions being the result of the researches we have lately undertaken on this interesting and hitherto obscure part of toxicology.

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* There exists another kind of upas, which is merely a preparation of strychnia.

The effects produced on animals by these poisoned arrows would appear at first sight to be strictly similar to those produced in our own climate by the venom of toads; but when we inquire into the chemical composition of this new substance, we find it to be a perfectly stable compound, the properties of which are not destroyed by plunging it into boiling water or dissolving it in alcohol. The arrows which have been allowed to rest for a certain space of time in this latter solvent, are found to have lost their destructive power, although no change has taken place in their dark-brown color; and the liquid in which they have been kept being gradually evaporated, the solid residue left behind appears to contain the active principle which imbibes them, for on redissolving it in water, a poison is obtained which produces on animals the same effects as the arrows themselves.

But the opinions usually entertained with respect to venoms are entirely opposed to such a result. Animal poisons are in general considered as resembling ferments in their chemical properties, being easily destroyed by the action of heat, and modified by dissolution in alcohol and other powerful solvents. We ought, therefore, in accordance with generally received opinions, to have surrendered our former hypothesis; but however satisfactory the inductions drawn from previously ascertained facts may appear, an experimental verification is always indispensable in sound physiology, even in those cases in which it seems useful and almost absurd to require experimental proofs. Acting in conformity with this rule, which has always directed us up to the present time in our labors, we have examined in its turn the venom of toads for the purpose of ascertaining whether its characteristics were really such as had been supposed, and, contrary to our expectations, we have found it to be soluble in alcohol, and in all other respects as stable a compound as the active principle of these American arrows, for the action of boiling water destroys none of its properties.

It had been supposed, however, that no venom was fatal to the animal itself which secreted it; and as the poisonous arrows produce marked effects upon the toad, we found it necessary to try upon this animal the results produced by the inoculation of its own venom, in order to ascertain whether the opinion generally entertained on this point was scientifically true. The experiments undertaken for this purpose do not allow the slightest doubt to remain on this point. The toad is killed, like other animals, by the inoculation of its own venom; it is, however, true that the action of this poison is infinitely less intense in toads than in frogs, of all other animals those which resemble them most in organization; and it might hence be inferred that a certain degree of truth exists in the above-mentioned opinions. Let us bear in mind, however, that the resistance of the toad to all kinds of poison is infinitely superior to that of the frog; that strychnia, upas, and various other substances act in much smaller doses upon the latter than upon the former animal—a fact which agrees with the lower excitability of the nervous system in toads.

All these phenomena may therefore be reduced to a general principle, which we have strenuously endeavored to inculcate in the course of the present lectures, namely, that no essential differences exist between the homologous tissues of different animals; that properties observed in one case are found to exist throughout the entire scale of being, although considerable variations in their intensity are met with even in the case of neighboring species. You also perceive that our knowledge of venoms is less advanced than the other branches of toxicology, and that it is urgent to repeat a new series of experiments on each of those substances in particular; for we are not prepared, up to the present moment, to attribute the properties enjoyed by the venom of toads to the whole series of animal poisons; further researches are indispensable to settle the question.

Let us now, gentlemen, after this digression, resume the explanation of the effects produced by muscular poisons. The principal result of their action is sudden arrest of the heart's motion; and in this respect they might also be divided into two classes. Some of them act upon the heart before affecting the voluntary muscles; such is the case with digitalis and upas antiar. Corroval and vao enjoy this power in a still greater degree. The reverse is the case with other poisons; they act upon the voluntary muscles at first, and do not paralyze the heart till a later period of the destructive process; the American arrows belong to this latter class. It is therefore easy to conceive how wide is the difference between the intensity with which these poisons act in animals differently organized. A very small dose of corroval produces instant death in birds; a mammal survives a few minutes; while frogs resist the action of this substance for a considerable space of time, these animals, as you are aware, being able to survive a few hours after the total ablation of the heart.

We shall now perform a few experiments on various animals with these different poisons, and you will find that far from resembling woorara and strychnia, which destroy life without leaving the slightest vestige of their action, these muscular poisons actually produce deep physical changes in the tissue which loses its physiological properties under their influence.

(At this stage of the lecture a couple of pigeons were brought forward; an incision was made into the breast of both, laying bare the muscular fibres, and on applying test-paper, a decided alkaline reaction was met with in both cases. One of the pigeons was then killed with a poisoned arrow, the other with a solution of woorara injected into the cellular tissue. A frog was at the same time poisoned by introducing a small dose of corroval under the skin; it was then replaced in the jar from which it had been taken.)

You perceive, gentlemen, that the muscular tissue offers a decided alkaline reaction in the healthy state. But in animals poisoned with any of those substances which act upon the contractile elements, the reaction of this tissue becomes acid, and the *rigor mortis* occurs immediately after death; two changes which spontaneously take place in dead animals, but only after a space of twenty-four hours has elapsed. The electrical properties of this tissue equally undergo a singular alteration, for, in the ordinary state of things, the external surface of a muscle is positively, and its internal or cut surface negatively electrified; the reverse is the case in animals poisoned with these toxic agents. And, lastly, on opening the bodies immediately after death, the heart is found contracted, motionless, rigid, and totally empty, so that its transparent walls in the frog have lost the ruddy color imparted by the presence of blood within the cardiac cavities, and appear perfectly white and colorless.

In all such cases the muscular element alone has been acted upon; for if on poisoning an animal with one of these agents, you were to apply a ligature round one of the limbs, and thus prevent the poison from reaching it, you would find that while the other muscles of the body remained insensible to the action of galvanism, those of the limb thus preserved, would readily obey its influence, when excited through the corresponding nerves; a proof that the muscular fibres alone have in this case been interfered with, the nerves retaining as before all their vital properties.

(The bodies of the poisoned animals were now opened; in the pigeon killed with an arrow, the heart was found rigid and motionless, the muscles stiff, and incapable of responding to the galvanic current. The same phenomena were observed in the frog, the heart of which was particularly rigid and perfectly colorless. On testing the muscles, their reaction was found decidedly acid. In the pigeon killed with woorara, the heart was found still in motion; and when at length its pulsations had ceased, galvanism was applied to it, and caused the parietes to contract; the muscles of the limbs responded readily and powerfully to the same agent and their reaction was alkaline.)—(*Medical Times and Gazette*, September 29, 1860.)

VI.—*On Muscular Contractions from Mechanical Irritation in the living Man.*

BY DR. L. AUERBACH.

Dr. Auerbach demonstrated to the Medical Section of the Schlesiche Vaterländische Gesellschaft, at its session of 1860, three series of phenomena observed by him on striking muscles with a percussion hammer or the finger. The first embraces the instantaneous contraction of the whole muscle when its whole breadth is touched, or of the particular bundle or bundles of fibres struck, when the blow is longitudinally limited. The blow need be but slight, and its effect is apparent to the careful observer, both by sight and on the touch. This Dr. Auerbach regards, not as the result of reflex action, nor of immediate muscular irritability, but as *neuro-muscular* contraction. The second series is one of *idio-muscular* contraction. It can be distinctly seen and felt as a limited hardness or tumor arising from the contraction of the fibres touched, and generally having the form of the instrument used, viz.: while the blunt edge of a knife causes a straight-lined rising or swelling, the touch with a ring causes a ring-form hardness, the square base of a hammer, a similarly-formed swelling, etc. The third result, observed from a blow, is a kind of *peristaltic* motion of the obliquely striped muscular fibres, giving the appearance of a wave rolling along the fibres of the muscle, from one end to the other and back again. Dr. Auerbach demonstrated these interesting facts before the section, especially on the biceps muscle of a blacksmith, who had a very muscular arm, and being affected with tuberculosis, was greatly reduced in fat. (Among the practical applications made of these observations, we only refer to the explanation of the benefits resulting from systematic blows on muscles as a means of inciting them to action, as employed in some species of medical gymnastics.)—(*Foriep's Notizen*, III., No. 8, 1860; *American Medical Monthly*, October, 1860.)

Dr. Auerbach has been anticipated in the larger part of what he describes, as new—first by Dr. Stokes, of Dublin, who many years ago recorded, in his work on the chest, the fact that a blow on a muscle causes the whole length of a bar of its fibres to contract; and, secondly, by Dr. S. W. Mitchell, Proceedings Biological Department of Academy of Natural Sciences, Philadelphia, March, 1859. In this latter paper is described, at length, both of the varieties of contractions alluded to by Dr. Auerbach, and, as will be seen from the following extracts, a somewhat different explanation of them is there given.

"Dr. Stokes, of Dublin, long ago observed that when he percussed the skin over the pectoralis muscle, its fibres contracted responsive to the stimulus of the blow. While percussing certain consumptive patients, Dr. Mitchell noticed that as the bar of muscle ceased to contract, a second contraction took place nearly at right angles to the first one. By it the skin was raised into a prominence, some lines in breadth and rather longer than the space covered by the percussing finger end. This second contraction so slowly disappeared that it seemed to be due rather to the action of organic non-striated muscle, than to the striated variety of which voluntary muscles are composed, and which is habitually rapid in its mode of contraction and of relaxation. Further observation, however, showed that a large part of the voluntary muscles, which are neither deeply placed or firmly bound down by fascia, are able to exhibit both of the forms of contraction here alluded to. Thus the extensor muscles of the leg and arm are not very susceptible to this form of direct stimulus, while the flexors and most of the muscles of the trunk, both before and behind, can be made to exhibit both forms of contraction by tapping them smartly and quickly with the finger point or a percussion hammer. The primary contraction, or that which involves the whole length of a fasciculus of muscle, is best seen when we strike upon the region of the pectoralis major or that of the gluteus maximus. The secondary and local contraction is best developed by percussing the pectoral region, and the skin which covers the infra spinatus scapular muscle. Illustrations of the phenomena in question are so frequently within reach of the members that Dr. Mitchell did not consider it necessary to describe them more fully.

"Several circumstances had already convinced Dr. Mitchell that the secondary contraction, described by him, was not due to the action of the non-striated muscle of the skin. A very obvious and simple experimental test at once referred the phenomenon in question to its proper source—the voluntary muscles beneath the cuticle.

"A small rabbit was rendered insensible by the aid of chloroform, and the skin was removed from the chest so as to expose the surface of the pect. major muscle. Upon striking the muscle with a scalpel handle or any blunt body, two distinct reactions ensued: 1. The fasciculus of muscle which was *stretched* by the blow, instantly and rapidly contracted and relaxed. As the relaxation took place, a local contraction occurred at the point struck, so that a small portion of the muscle could be seen to gather itself into a little mound, which again disappeared within from twenty seconds to half a minute. Both phenomena, then, are due to the contractibility of voluntary muscular fibre. Dr. Hammond, who had witnessed the experiment, and who had also seen the phenomenon in question, agreed with the explanation given by Dr. Mitchell."

MATERIA MEDICA AND THERAPEUTICS; MEDICAL CHEMISTRY; TOXICOLOGY AND LEGAL MEDICINE.

BY EMIL FISCHER, M.D.

MATERIA MEDICA AND THERAPEUTICS.

I.—*Rhus Toxicodendron in Paralysis.* By DR. MICHALOWSKI.

Dr. Michalowski advises the use of fresh rhus toxicodendron in paralysis, and reports the following case in support of his recommendation:—

A farmer, thirty-five years of age, had been suffering for two years with violent rheumatic pain in the bones and joints of the spinal column and of the lower extremities. At last swelling of the joints supervened, and exostoses of the size of a hen's egg appeared at many points of the vertebral column, and two similar tumors, as large as a child's head, on the transverse rami of the pubic bones. The lower extremities of the patient were completely paralyzed; his digestion was bad, and his urine was discharged by drops. After using many different remedies without success, Dr. Michalowski tried the extract of rhus toxicodendron, prepared from the plant, freshly gathered in botanical gardens. He administered one grain of the extract, made into a pill, with half a grain of the leaves, twice daily, and increased the dose to twelve grains of the extract, and ten grains of the leaves. After the patient had taken two ounces of the extract and one ounce of the leaves he was completely cured. During this treatment the swellings of the bones diminished in size; toward the end of the cure the patient had the sensation in his feet and in the sacral region, as if he were pricked by pins; he also had the feeling of a current going from the sacral region down into his feet. Once only, the administration of the medicine had to be interrupted, as the patient complained of pain and a burning sensation in his throat.—(*Allg. Mediz. Centralzeitung*, 1860, No. 48.)

II.—*Cotyledon Umbilicus in Epilepsy.* By DR. RODRIGUES.

This plant, which was described by Dioscorides under the name of *umbilicus veneris*, was employed in the earliest times. Mérat and Delent say that it is diuretic and refrigerant; topically applied it is resolvent. According to Valmont de Bomare it is employed in burns. Salter and Bullar, two English practitioners, were the first to recommend the juice of it in epilepsy, to be given internally in the dose of a teaspoonful twice a day, or the extract in the dose of five grains. The following is an abstract of some cases in which this treatment was employed:—

1. Maria Felicia, of Alpedrinha, forty-six years of age, of nervous temperament, having been much appalled by the assassination of her husband in 1834, was in consequence of it taken, always at the time of full moon, with epileptic attacks of variable intensity and duration, which were not preceded by an *aura* or any other precursory symptom, but were followed for four or five days by vertigo, tinnitus aurium, depression of spirits, and loss of memory. Having

entered the hospital in 1852, she had her usual attack during the night. On the next day she was found much changed in her appearance, and having an air of idiocy. Five days afterward she was purged with castor-oil, and immediately put on the use of the juice of cotyledon umbilicus, a teaspoonful every morning and evening. The next attack was missing at the habitual time, and the patient suffered but from vertigo for two days. She continued to take the juice of cotyledon for one hundred and three days without interruption, and had no other epileptic attack ever since.—(*Gazeta Medica do Porto*, 1852.)

2. A young and delicate-looking seminarist, at Santarem, was taken, in April, 1854, with epileptic attacks, which recurred daily at intervals of two to three hours, manifested themselves by convulsions and frightful contortions, and were of variable duration. All remedies having been employed in vain by the physicians of Santarem, and by Dr. Gil Esteves, the latter administered the juice of cotyledon umbilicus, and in two days the patient experienced a decided amelioration.

3. Correia Martins, sub-deacon, thirty-three years of age, of sanguine temperament, had been subject for three years to frequent attacks of epilepsy, which recurred at every new moon. The juice of cotyledon having been taken, the attacks ceased, and had not reappeared a year after the medicine had been resorted to.

4. I. de Matos, fourteen years old, of sanguine-nervous temperament, had been subject for two years to frequent attacks of epilepsy, during which he lost consciousness and struggled in horrible convulsions which rendered him extremely prostrated. The juice of cotyledon having been used for one month, the attacks ceased, and there has been no relapse for five years.

5. A married woman, twenty-six years of age, living in Portalegre, of nervous temperament, who had been nearly drowned when crossing a river in August, 1856, was suddenly taken the next month with difficulty of speaking; she stammered unintelligible words, with contortions and grimaces, her eyes being turned upward; she foamed at her mouth and had convulsions of the extremities; loss of sensation and movement followed for an hour and a half, and, on awaking, loss of memory and extreme fatigue. Other similar attacks supervened, during which she bit her tongue, but which were not announced by any precursory symptom, and had no relation to the phases of the moon. All the antispasmodics prescribed by different physicians were used in vain. The juice of cotyledon having been ordered in December, 1856, the attacks, which then occurred every second day, became soon less intense, and progressively less frequent, recurring at intervals of eleven, fifteen, sixteen, twenty-two, and twenty-nine days; but, the supply of the fresh plant having been exhausted, and the juice and the extract being very liable to change, the patient ceased taking it, and has not been seen since.—(*Gazetta Medica da Lisboa*, 1860, No. 12.)

Although these cases leave much to be desired in regard to precision and details, they permit the conclusion that the fresh juice of cotyledon umbilicus (in preference to the extract) may be employed internally without danger, and that its administration, continued for several months, is useful in some epileptiform affections, and perhaps in hysteria.—(*Archives Générales*, November, 1860.)

III.—*Aquoso-Alcoholic Extract of Olive-leaves in Intermittent Fever.*
By M. A. de Roseville.

M. de Roseville has used the aquoso-alcoholic extract of olive leaves, according to Aran's recommendation, in two cases of obstinate intermittent fever, and in three cases of facial and frontal neuralgia with very favorable results. He prescribed 0·75 to 1 gramme in the form of pills, divided into three doses, and repeated this dose if the case required it.—(*Gaz. des. Hôp.*, 1860, No. 53.)

IV.—*Sulphide of Antimony in Diseases of the Heart.* By M. Fauconnet.

M. Fauconnet states that from his eighteenth year he had been subject to affections of the heart, which always followed up some violent exertion, and were then increased and kept up by the moral causes alive at that age. "During the space of fifteen years I have used and abused, without any result, venesection, leeches, baths, digitalis, water, moderate diet, etc. In my twenty-fourth year I had an attack of paludal fever, and the only consequence of its treatment was the addition of gastralgic pains, rendering my existence quite painful. During five-and-twenty years, though removed from the place of infection, I continued to have these pains in the stomach, combined with attacks of the fever, and without abatement of the affection of the heart. In my fiftieth year I commenced to take the sulphide of antimony for these incessant attacks of fever, and before long with the most beneficial result. The first experience I made after the second day of this treatment was the gradual disappearance of the gastralgic pains, which were my greatest dread. The same took place with the fever. Finally, the palpitations and pains of the heart decreased, though slowly, and at last disappeared. After persisting for two months in the use of this medicine, I experienced, for the first time in thirty years, a satisfactory feeling of health."

M. Fauconnet then relates a case of neurosis of the heart, a case of rheumatic endocarditis and hydrocardia, a case of rheumatic neurosis of the heart, with bloody secretions of recent formation, all of which were cured by the sulphide of antimony.—(*Druggists' Circular, from Gazette Médicale de Lyon*, May,1860.)

V.—*Observations on Coca.* By Dr. C. Haller.

With reference to the elaborate treatise on this plant by Mantegazza, (*North Am. Med.-Chir. Review*, March, 1860, p. 340,) as well as to the alkaloid discovered in it by Wöhler, (*North Am. Med.-Chir. Review*, Nov. 1860, p. 1105,) we notice the following of the observations made by the author :—

A feeble infusion of coca-leaves produces a pleasant excitement, followed by sleeplessness; a stronger one keeps off hunger, prevents loss of breath on ascending mountains, dilates the pupil and blunts the sensation of light. The effect from chewing the leaves formed into a ball takes place more gradually. According to Weddell, excessive chewing of coca causes very offensive breath, pale lips, greenish and dull teeth, and an ugly black stain in the corners of the mouth, an unsteady gait, yellow skin, sunken and feeble eyes surrounded by dark-red rings, trembling lips, and a general apathy. Its first injurious effect is enfeebled digestion; then follows a local disease, which is called "opilacion," but of which no description is given; disturbance in the biliary secretion, and especially biliary calculi. Boulimia for animal excrementitious matter is one of the symptoms of the dyscrasia which terminates with dropsy, and finally, death.

The chemical effect of coca-leaves seems to be similar to that of wine and tea, as the natural disintegration of tissues is very much diminished by their use. Coca-leaves resemble hemp in producing dilatation of the pupil; opium, in exalting the strength of the tired system, and in its peculiar effect upon the mind. V. Tschudi recommended them recently again as a nourishing restorative for mariners, as well as for the prevention of the evil effects following the prolonged use of salted provisions.—(*Wien. Zeitschrift*, N. F. iii., 28, 1860.)

VI.—*Aceton in Catarrhal Affections of the Larynx.* By Dr. H. Itzigsohn.

Dr. Itzigsohn recommends aceton in chronic laryngeal catarrh, affecting persons of middle age, having a slender, but not too long a neck, and a prominent poma Adami, as is frequently observed in tenor singers. The following is given as an appropriate formula for its use: ℞. Acetonis anglici, Spirit. acet. æther. ana ʒij; Aq. Laurocerasi, ʒj; Ol. Millefol., Ol. Salviæ, Ol. Fœniculi æther. ana gtt. v. Ffteen drops to be taken every three hours, upon sugar.—(*Med. Centr. Ztg.* xxix. 38, 1860.)

VII.—*On the Treatment of Delirium Tremens by Large Doses of Digitalis.* By G. M. Jones, M.R.C.S., Lond. and Edin. *Testimony in favor of this Treatment.* By Drs. Wynn, Williams, Ballard, and Carr.

We copy from the *Medical Times and Gazette* the following interesting communication by Mr. G. M. Jones, Surgeon to the Jersey General Hospital:—

"Having just had an opportunity of showing to some medical friends from London—Mr. Spencer Wells, Dr. Ballard, and Mr. McCrea—the effects of large doses of digitalis in the treatment of a very severe case of delirium tremens, and having been strongly advised by them to make my experience of this mode of treatment known to the profession, I gladly do so by means of the *Medical Times and Gazette*.

"About twelve years ago I was called to see a patient with delirium tremens, residing about a mile from my house, who was almost *in articulo*. I prescribed a dose of chloric ether with tincture of opium; but the wife, who came for the medicine, took, by mistake, a phial containing *one ounce* of tincture of digitalis. I discovered the error, and was horrified when I heard the patient had taken this dose; but no less surprised than pleased when I also heard that, instead of being poisoned, he was very much better. Under ordinary treatment I fully believed he would have died; but after this single dose he rapidly recovered. Profiting by this hint, I began to give digitalis in all the cases of delirium tremens which came under my care in hospital and private practice; and during the last twelve years I have adopted it in at least seventy cases—this effect of drunkenness being very common in Jersey.

"As to the dose, experience has taught me that the best dose is *half an ounce* of the tincture given in a little water. In some few cases this one dose is enough, but generally a second dose is required four hours after the first. In some cases, but very seldom, a third dose is called for; but this hardly ever need exceed two drachms. The largest quantity I have ever given was *half an ounce* at first, *half an ounce* four hours afterward, and another *half ounce* six hours after that, making an ounce and a half in ten hours.

"As to the effect of these doses, my impression is that the action is on the brain, not on the heart. The pulse, so far from being lowered in force, becomes fuller and stronger, and more regular, soon after the first dose. The cold, clammy perspirations pass off, and the skin becomes warmer. As soon as the remedy produces its full effect, sleep for five, six, or seven hours commonly follows; sleep is the guide as to the repetition of the dose. No action on the kidneys is evinced by any unusual secretion of urine. Sometimes the bowels are slightly acted on, but not commonly. I have never once seen any alarming symptoms follow the use of these large doses of digitalis. The only case I have lost since adopting this treatment, had a tumor in the brain. In three only was other treatment adopted after digitalis had failed to procure sleep; in other words, in sixty-seven out of seventy cases digitalis was the only medicine used, and sixty-six of these patients recovered. I do not mean that these are the exact numbers of those treated; I am certain as to the deaths, but I may have had more recoveries. I am well within bounds in saying seventy cases in twelve years, and that all of them were well-marked cases of delirium tremens. Slight cases of nervous derangement after drinking I have seen in great numbers; but I speak here only of such cases as required active treatment. My previous experience of the results of the treatment by opium, or some of its preparations, by antispasmodics, etc., had certainly been much less successful; the proportion of deaths was larger, and the recovery much less rapid. Again, I have treated more than one patient successfully by digitalis, who, in subsequent attacks elsewhere, has been treated by opium, and died; and in many of the cases in which I have used digitalis successfully, opium had been previously given without any good effect.

"I will only allude to one case in illustration. On September 9, 1860, I was called to see a gentleman, forty-eight years of age, who was in a very alarming state, having been without sleep four days and nights, having been 'muddled' for two months before, and having previously had 'fits of the horrors.' He had been treated by another practitioner by opium in moderate doses, but had become worse, and when I was sent for, it was the opinion of Mr. Spencer Wells and Mr. McCrea, who accompanied me in my first visit, that the case was as bad a one as *they* had ever seen; certainly *I* never saw a worse. The pulse was almost imperceptible; the skin covered with cold, clammy perspiration; the face deadly pale; the lips blue; the hands tremulously grasping the air; the eye expressive of great fear; the mind gone; he was muttering incoherently. With some difficulty I passed half an ounce of tincture of digitalis down his throat, in the presence of my friends. In a few minutes he became more tranquil, the pulse was felt more easily, and we left him. After four hours I found that he had not slept, but he was rather more sensible, less tremulous, and warmer. I accordingly repeated the dose. Three hours after that, as he had been still without sleep, though in other respects improving, I gave two drachms more, making ten drachms in seven hours. After this he had some sleep, and had slept at intervals during the night. The next morning Dr. Ballard saw him, with my other friends, and all of them were much pleased with the great improvement manifested. He was sensible, his fears had disappeared, he was very slightly tremulous; the skin was warm, the tongue moist, and the pulse full and regular at ninety. The heart's sound and impulse were normal; the bowels had acted once, and urine had been passed in natural quantity. After this he took some broth, drank freely of imperial and lemonade, but took no stimuli of any kind, or any other medicine. He slept uninterruptedly for three hours and a half in the afternoon, and at intervals in addition. The next night was a good one; and when he was seen by my friends again the next morning, he was almost well, and calling out for a mutton-chop.

"I trust that this narrative of the results of my experience may induce others to follow what I believe to be a very valuable practical lesson; but I must warn those who do so not to try, as I have done, any smaller doses than those I have recommended. They would not only lose valuable time by so doing, but I believe would do harm. Doses of half a drachm or a drachm do no good whatever; and the pulse, in some cases where I tried them, became intermitting. I have never seen this effect from the larger doses; on the contrary, a feeble intermitting pulse has generally soon become fuller and more regular, proving, I think, as I said before, and as I again wish to impress on the profession, that the curative action is on the nervous system primarily, and not on the organs of circulation."

Since the publication of the above article, Drs. Wynn, Williams, Ballard, and Carr have corroborated the statements of Mr. Jones, in several communications, published in subsequent numbers of the *Medical Times and Gazette*, and have supported their testimony in favor of the treatment of delirium tremens by large doses of tincture of digitalis, by the report of a number of cases. "My own impression," says Dr. Ballard, "from what I have seen and heard from Mr. Jones, is, that in tincture of digitalis we have a true *counter-poison*—an addition to that class of mutually antidotal poisons of which opium and belladonna have been the most recent example. Alcohol is the remedy by which we counteract the depression produced by digitalis; the converse is also true; digitalis is most remarkably an antidote for alcoholism."

Dr. Carr, of Blackheath, who has been acquainted for two years with Mr. Jones's mode of treating delirium tremens, expresses himself in the following manner: "In no case has this treatment failed to produce a relief to all the urgent symptoms—tremors, delusions, and insomnolence. The effect of full doses appears to be directly on the sensorium, acting as a sedative, and at the same time sustaining the failing powers; the wandering eye, the excited and mal-impressed ear, the unduly imaginative brain, the jactitations of the muscular system, approaching in some cases to, and in others passing into, convulsions, all become calm; the creamy tongue cleans; the staggering pulse acquires volume and distinctness; and, indeed, all the evils of mania a potu pass away. In some cases under my care, where the nervous system has been undermined to the extreme by lengthened indulgence, I have combined chloric ether, in doses of thirty minims, giving such every half hour, with three drachms of the tincture of digitalis, repeating the remedies until two ounces of the latter had been taken, when I have ceased for twenty-four hours; after which I have repeated the medicine in less full doses, measuring the quantities needed by the condition of my patient, the amount of sleep obtained, the degree of tranquillity enjoyed, and the state of the pulse, quiet or tremulous." * * * * * "Lest the somewhat warmly and adversely expressed remarks of Dr. Armstrong, in your impression of last week, on the subject of digitalis, should deter the profession from the use of that remedy in large doses, as recommended by Mr. Jones, of Jersey, I will, with your permission, add another authority to those already adduced. Pereira gave ʒj of the tincture thrice a day for fourteen days without producing any marked effect; and on one occasion two ounces were taken in two doses without giving rise to the slightest inconvenience. No one doubts that digitalis is, alike with many other valuable medicines, a poison; and with an equal conviction that, when administered in proper doses, it is a valuable remedy. It is well known, too, that its effects are cumulative, consequently its exhibition requires to be carefully watched. With this knowledge no prudent man would give doses, toxic beyond a doubt, such as Dr. Armstrong has described were wantonly given to an epileptic. But in delirium tremens, where the nervous system has been undermined by undue stimulation, when the vital forces are at a low ebb, and when the tolerance of the remedy in question has been repeatedly tested by careful observers, medical men may safely administer the comparatively larger doses, not only with impunity, but with the almost certainty of good. Such, at least, has been my experience for the last two years. With your sanction I will, at a future period, further ventilate this subject, giving a few cases in detail, and compare the opium with the digitalis treatment,—the former the more usual, yet the less successful."—(*Med. Times and Gazette*, October, 1860.)

VIII.—1. *On Santonin.* By PROFESSOR FALCK, of Marburg. 2. *On the same subject.* By DRS. V. HASSELT and RIENDERHOFF.

Professor Falck communicates in his treatise the result of fifteen experiments made by himself and Dr. Manns, with the view of investigating the physiological effects of santonin. The conclusions at which he arrives are the following: 1. Santonin and santonin-soda are poisons; at the same time it is not to be denied that they are valuable remedies. 2. A solution of santonin in dilute alcohol, introduced in proper quantity directly into the blood, rapidly causes the death of a dog, and undoubtedly also that of any other animal. 3. Injected into the subcutaneous cellular tissue santonin-soda is absorbed into the blood. Also, if introduced into the stomach, santonin as well as santonin-soda may pass into the blood. 4. Under conditions not completely known, santonin as well as santonin-soda are changed, within the animal body, wholly or partly into a substance which is secreted with the urine, and can be demonstrated in the latter by means of caustic alkalies. 5. The change of santonin, respectively santonin-soda, into this substance which reacts, on the addition of caustic alkalies, with a red color, may take place, under certain circumstances, in a very short time. The elimination of the substance with the urine lasts, under certain conditions, a very long time. 6. Under the influence of santonin and santonin-soda the urine assumes readily a peculiar, yellow color. This color is evidently owing to the substance which is formed, in the animal body, out of the santonin. 7. On evaporating urine containing this substance, in a water bath, the latter is changed so much that it does not react any more with a red color on the addition of caustic potassa. 8. The urine secreted under the influence of santonin is not always of a saffron tint, but may occasionally assume a red color, viz., if ammonia is formed by decomposition of urea, or if the santonin has been administered in combination with alkalies. 9. Santonin and santonin-soda exert a remarkable influence on the brain and the organs of vision; they produce incoherency of ideas and chromatopsy. 10. The chromatopsy caused by santonin or santonin-soda is undoubtedly connected with the formation of the substance, reacting with a red color on addition of caustic potassa; we, therefore, call this condition "xanthopsy." The more the blood contains of this substance, the greater is the chromatopsy. 11. Chromatopsy can not be caused by dropping an aqueous solution of santonin-soda directly into the eyes. 12. The phenomena produced by santonin poisoning are different according to the difference of circumstances and conditions. Death is almost always preceded by convulsions.—(*Deutsche Klinik*, 1860, Nos. 27 and 28.)

2.—Messrs. v. Hasselt and Riienderhoff publish, in the *Nederl. Tijdsch. voor Geneesk.*, 1860, "a contribution to the toxicodynamic knowledge of santonin." They draw from their experiments the following conclusions, important to the practitioner as well as to the toxicologist: 1. Santonin can act as a poison. 2. As such it seems to belong, in general, to the class of *narcotica spinalia*, without leaving in the dead body any perceptible sign of its irritating secondary effect, although symptoms of it are observed in man during life. 3. Its action, on the administration of large doses, is analogous to that of tetanic poisons. 4. In relatively smaller doses, for instance, of six grammes, it produces in dogs slight symptoms of poisoning. 5. In large doses of sixty to ninety grammes, it can act fatally on these animals with relative rapidity. 6. Santonin manifests its action then, at first, in the sphere of the motory nerves, which action is shown by spasmodic contractions of the muscles without an increase of sensibility. The course of the affection makes it evident that the motory part of the spinal marrow is acted upon progressively from below upward. The fatal termination seems to be owing to spasms of the respiratory muscles and of the muscles of the larynx. These spasms may be considered the cause of the asphyxia which finally takes place. 7. The post-mortem appearances, hyperæmia of the lungs, engorgement of the heart, hyperæmia of the cerebro-spinal membranes, and capillary injection of the medulla spinalis and oblongata, are probably in causal relation to the spasmodic contractions of the muscles as well as to the death by asphyxia.

Without having the intention of assuming, from their experiments, that the effects upon man are equal to those upon dogs, the authors still believe that, considering their observations in regard to the action of santonin upon man, they have sufficient reasons to conclude *that santonin is, by no means, to be regarded as an innocent remedy.*—(*Medizinische Neuigkeiten*, August 18th, 1860.)

MEDICAL CHEMISTRY.

I.—*On the Products of Decomposition of Albuminoid Substances.* By MM. ERLENMEYER AND SCHOEFFER.

The authors have endeavored to determine, *quantitatively*, the products of the decomposition of albuminoid substances, by sulphuric acid. The acid employed was diluted with one part and a half of water. The following are the first results of these researches :—

The best proportion of acid to be employed is that of five parts for an animal substance, with the exception of horn, which requires ten parts of acid. Three hours of boiling suffice to effect decomposition.

The ligaments of the nape of the neck have given one-quarter per cent. of tyrosin, and thirty-six, forty-one, and forty-five per cent. of leucin ; a little of the latter remains in the mother liquids.

From fibrin of the blood, pure tyrosin is easily obtained by neutralizing first the liquid, then evaporating it to 1·08, 1·10 of density ; crystallization takes place on cooling.

The following are the results obtained with a certain number of these matters :—

	Leucin.	Tyrosin.
Fibrin of blood	14 per cent.	2 per cent.
Fibrin of muscles . . .	1 "	18 "
White of egg	1 "	10 "
Horn	10 "	3·6 "

Besides leucin and tyrosin, the authors have found in fibrin, albumen, and casein the still badly-defined body which has been observed by Bopp among the products of decomposition of these proteinaceous substances, (*Annuaire de Chimie*, 1850, p. 560,) and which Messrs. Erlenmeyer and Schoeffer are tempted to consider a mixture of several compounds, of which one, at least, contains sulphur.—(*Journ. für praktische Chem. and Journ de Pharmacie et de Chimie*, October, 1860.)

TOXICOLOGY AND LEGAL MEDICINE.

I. *On the Effects of Chronic Lead Poisoning on the Fœtus.* By M. PAUL.

M. Paul's attention was first called to this subject by the case of a female type-polisher, who, prior to her exposure to habitual contact with lead, had borne three fine children ; while of the ten pregnancies which had since then occurred, eight were attended with miscarriage, the only child born at full time dying when five months old. She informed him that almost all the women similarly employed either miscarried or were unable to rear their children. Investigating the subject further, he found that these statements were founded on fact; and that not only was this hereditary influence imparted by the mother who had been working with lead, but also by the father, when the mother herself had not been exposed to such influence. Of this latter fact he has not been able to obtain more than 7 instances; but altogether his paper is founded upon 81 cases, which he has investigated. In some instances the effect upon the fœtus has been produced after but slight exposure, and in which the death of the infant has been almost the sole accident resulting from such exposure. Of the 81 individuals, male and female, interrogated, in 29 pregnancies occurred while engaged in manipulating the lead, these pregnancies amounting in all to 123. The results were, 64 abortions, 4 premature labors, and 5 born dead; that is, 73 children dead prior to delivery! Moreover, 20 children died in the course of the first year, 8 in that of the second, 7 in that of the third, and 1 later. There are 14 living children, but 10 only more than three years of age. In 15 instances, too, the women suffered from metrorrhagia, which was probably, in fact, abortion—for the saturine poisoning, in the degree in which it causes the death of the product of conception, does not usually disturb the menstruation itself, either in girls, in persons who have not borne children, or in the intervals of pregnancies. The author is still engaged in investigating the entire subject, but in the mean time desires to call attention to what he believes to be a new subject of inquiry.—(*Med. Times*, August 18, 1860, from *Archives Générales*, May, 1860.)

II. *Sudden Death without any adequate Post-mortem Appearances.* By MR. J. Z. LAURENCE.

Mr. J. Z. Laurence communicated to the Harveian Society, May 3, 1860, the following case and interesting remarks:—

"On the twenty-fourth of April, the housemaid in a medical man's family was sent out to fetch the beer, when, within ten minutes afterward, she was found by the cook lying apparently dead in the scullery. I saw her myself in about another quarter of an hour. There was no action of the heart, no breathing, no sensibility; the body was still warm; the face livid and swollen. The only symptoms observed during life were that, for about a week before her death, she suffered from earache, appeared unusually indolent and stupid, and at times complained of faintness.

"*Post-mortem examination*, about twenty-two hours after death. The body was large, finely developed, very fat. Cadaveric rigidity was strongly marked in the limbs and the firmly-clenched lower jaw. The left ventricle of the heart was filled with dark fluid blood, and was firmly contracted; the right was flaccid and collapsed, containing but a very small clot. The muscular substance was apparently normal. The heart was altogether small in proportion to the body. The lungs were slightly congested. Between the two openings of the stomach was an oblong patch of fine punctiform florid injection in the lines of the rugæ. It contained an undigested meal of some stewed steak, of which the patient had partaken shortly before death. No poison of any kind was found in a careful analysis instituted by Mr. Rodgers, at the request of the jury. The intestines were not opened; their peritoneal coat was covered with congested veins, but in no very marked degree. The liver was somewhat congested. The spleen was soft and congested. The kidneys were very much congested. (She was menstruating at the time of her death.) The superficial veins of the brain, as those of the medulla oblongata, were turgid with dark blood. There was a slight amount of serum beneath the arachnoid, (which was somewhat opaque here and there,) especially in the basilar fossa. The brain-substance itself was perfectly normal. The larynx, trachea, and œsophagus were healthy, and contained no traces of any food in them.

"*Remarks.*—This case is interesting in medical jurisprudence, in two points of view: first, for the unusual precision with which the entire suddenness of the death could be fixed; second, for the total absence of any *post-mortem* appearances usually found in cases of sudden death, (such as heart disease, burstiug of aneurisms, etc.) In the *Annales d'Hygiène Publique* for 1838 will be found a paper by Devergie, entitled 'De la Morte Subite,' in which, with other causes of sudden death, he signalizes that by syncope, which he had found to occur three times in forty cases. Dr. Tourdés reported to the scientific congress meeting held at Strasbourg in 1842, that he had met with this cause of sudden death once in twenty-six cases. It appears to be identical with the 'idiopathic asphyxia' of Chevalier. Devergie, in the paper above refered to, gives the following as the post-mortem appearances he found in his three cases of death from syncope: '1. The absence of all congestion of the organs. 2. The normal state of all the organs. 3. The existence of about an equal quantity of blood in the right and left cavities of the heart, regard being had to their respective sizes. 4. Perhaps the coagulation of the blood in the fibrinous state.' As another cause of sudden death, Devergie further indicates that arising from cerebral congestion, which may, he says, be limited to the meninges. In illustration of this, he relates the case of a man aged sixty-three, who, having only complained of slight headache in the morning, took a good breakfast, after which he slept for two hours, and, on awaking, suddenly died. No congestion of the brain-substance was found; there was an old apoplectic clot in the left corpus striatum; there was great congestion of the meninges of the brain and spinal cord.

"Directing attention now to the condition of the stomach in our case, we may naturally ask ourselves whether the undigested meal, or the patch of injection on its coats, may have had anything to do with the cause of death? As regards the latter, no one would, I think, after the researches of Dr. Yellowly and others, attach any great independent value to mere vascularity of the gastric mucous membrane. The undigested meal may perhaps possess rather more significance. The deceased seems to have been in the habit of 'bolting' her meals very rapidly. The stewed steak found in her stomach, I am informed, she partook of stealthily—and therefore probably hastily—before her proper dinner, shortly before death.

"Dr. Taylor, at page 152 of the second edition of his work on *Poisons*, has cited several instances of persons dying quite suddenly, with nothing to account for the death but distention of the stomach; but I noticed no such distention in the present case. We may not unreasonably connect these conditions of the stomach with the syncopal affection. Professor Weber has shown that irritation of the pneumogastrics will stop the heart's action; and my distinguished friend and colleague, Dr. Brown-Séquard, has further shown that crushing the semilunar ganglia has a similar effect on the heart, provided the great splanchnic and pneumogastric nerves remain intact.

"I should feel disposed to regard the present case as one of mixed nature, presenting some of the signs of syncopal asphyxia, others of apoplexy. Explain it, however, as we may, it still remains one of considerable interest, proving as it does that, under certain (as yet very imperfectly understood) circumstances, death may occur suddenly without leaving any traces at all adequate (in our present state of knowledge) to account for the fatal result."—(*British Medical Journal,* May 19, 1860.)

III. *Remarks on Fish Poisons.* By DR. REIL.

The observations made by the author on this subject are, essentially, the following:—

Fish may prove injurious to health either in the preserved condition, that is, salted, pickled, or dried, or in the fresh state. Their poisonous properties in the simple or fresh state may be owing to the following circumstances: 1. They may themselves under all circumstances be poisonous, as has been maintained in regard to several species of fishes, although the fact requires further proofs. 2. They may under certain circumstances acquire poisonous properties, as for instance, by diseases peculiar to them, or at certain seasons of the year, or, as is known of the *Cyprius barba* and *Cyprius carpio*, at the spawning season. 3. Poisonous substances, such as *Hydrocarpus inebrians*, *Menispernum cocculum*, *Delphinium staphysagria*, etc., may have been used in catching them, or they may have been poisoned in another manner—for instance, by acids and metallic salts which contaminate the water in the neighborhood of factories. 4. Their injurious properties may be owing to commencing putrefaction.

The different modes of preserving fish give rise to chemical processes which cause the formation of poisonous matters. Injurious consequences from eating salted fish, particularly salted sturgeon, are frequently observed in Russia. But also codfish, and the smaller kinds of preserved fish, have given rise to symptoms of poisoning. Cases of poisoning from herrings are perhaps the rarest, and this is probably owing to the fact that the time for catching herrings is limited to a certain season, that they are salted without delay when still at sea, and that they are more rapidly consumed.

The character of the poison generated in preserved fish is still doubtful; at first the poisonous substance was thought to be of cryptogamous growth, or a fatty acid; more recently Schlossberger advanced the view that the propylamin (trimethylamin) contained in the brine is the poison in question, but this opinion has been refuted by the experiments of Buchheim.—(*Casper's Vierteljahrschrift,* xv. 2, 1860.)

PATHOLOGICAL ANATOMY.

BY JOHN H. PACKARD, M.D., OF PHILADELPHIA.

I.—*Diseases of Brain.* By Dr. V. M. Beronius, of Fahlun, Sweden.

(1) *Abscess in the Right Cerebral Hemisphere.*—A. W., a merchant, aged forty-seven, had a profuse epistaxis in May, 1857, and from that time his health declined. He had various symptoms of cerebral disturbance, but nothing very marked until December twenty-third, when he was seized with vertigo while at the table. This left behind it headache, restlessness, insomnia, and hemiplegia of the left side, with a tendency to bedsores on the corresponding lower extremity; but these symptoms passed off in about five weeks. On March 5th, 1858, he had a severe epileptiform convulsion, chiefly affecting the left side, lasting five hours, and followed by coma; from the effects of this seizure he recovered in two weeks. After several such attacks, recurring about every fourth week, an unusually violent one, of a more apoplectic type, carried him off on the sixth of August.

The head was examined forty-eight hours after death. The membranes of the brain exhibited increased vascularity, but were completely free from exudation, and seemed somewhat œdematous. At the upper and back part of the right cerebral hemisphere, there was a slight depression in the cerebral substance, and the pia mater was thickened. At this spot, within two lines of the surface, was an abscess of the size of a small apple, containing a thick, greenish, pus-like fluid, with no particular smell. Two smaller cavities, of the size of walnuts, communicated with the first named by sinuous passages. Around the larger cavity there was a rather firm capsule, but the others were bounded by softened, reddish or yellowish brain-substance. In several of the blood-vessels of the brain atheromatous deposits were observed.

Dr. Beronius regards this case as one of capillary hemorrhage, or else of primary softening from embolia; the fatal result was in his opinion brought on either by congestion (?) or by cerebral paralysis.

(2) *Tumor of the Cerebellum.*—A woman, aged forty-five, healthy from childhood, began nine months before her admission into hospital to suffer from vertigo and singing in the ears, accompanied with progressive diminution of the power of vision, and uncertainty in walking. During her stay in the hospital these symptoms increased, and she became completely amaurotic in the right eye, and amblyopic in the left; her speech was faltering, she had difficulty in pronouncing words, and progressive inability to express herself. She never complained of any decided headache, but was extremely annoyed with buzzing in the right ear. Her gait became gradually more uncertain, and was attended with the peculiarity that at every step she lifted her feet very high, and felt as if the floor went up and down like waves; after walking a short time she began to totter, always turning round to the left, and falling down in that direction, if she was not supported. The power of walking visibly diminished, and complete paralysis would probably have ensued if erysipelas of the face had not supervened, of which, after three months' stay in the hospital, she died.

"On post-mortem examination a fibrous tumor of the size of a hen's egg was found beneath the tentorium, proceeding from the posterior surface of the petrous bone, and compressing the cerebellum" anteriorly on the right side.—(Translated from the *Hygiea*, January, 1860, for the *Dublin Medical Press*, October 10, 1860, by W. D. Moore, M.B., etc.)

II.—*Softening of the Medulla Spinalis, from the pressure of a Tumor.* By HR. MALMSTEN.

Charlotta Boll, aged forty-one, was admitted into the Seraphim Hospital, on the 23d of August, 1859. She had been healthy all her life, except occasional rheumatic pains, attacks of hysteria, and constipation. Two years previous to the above date, she received a blow on her breast, and has ever since been liable to pain and stitches in the right side. In September, 1858, she began to suffer from pains in the right shoulder and chest; and in the spring of 1859, a cough came on, with free expectoration. In May, she lost sensation in the right leg, and soon after in the left also; then both the lower limbs became powerless, with formication and occasional spasms. The anæsthesia extended to the abdomen, so that she voided her urine and fæces involuntarily, and even gave birth to a child almost without consciousness.

When admitted to the hospital, she was paraplegic, with tenderness over the ten superior dorsal spinous processes, as well as between the right scapula and the median line. Sensation and voluntary motion were lost, but reflex action could be produced, in the abdomen as well as in the lower limbs; she had a feeling of constriction around the trunk. Her skin was of an ash-gray color, and dry, but of normal temperature. Some bedsores had formed about the buttocks. Vomiting and diarrhœa supervened on the third of September, and carried her off in sixteen days.

On post-mortem examination, the chief lesion detected was as follows: "The dura mater and arachnoid of the medulla spinalis were healthy, but on opening the latter a tumor of nearly two inches in length was met with, of rather flattened form and loose consistence, which lay inclosed in a proper capsule, and extended from the second down to the fourth dorsal nerve; it had its seat on the right side of the spinal cord, and involved almost the entire of the right half of the latter; by this tumor the medulla spinalis was compressed and softened in this situation. The origins of the nerves were, particularly on the right side, compressed and partly atrophied. Both above and below the tumor the spinal cord appeared to be perfectly sound. The cerebro-spinal fluid was in rather more than normal quantity."

This tumor was lobulated, composed of fine connective tissue with numerous nuclei, the fibres being arranged in bundles overlaid "with small flat cells arranged like epithelium, almost all completely filled with large nuclei."

A curious lesion was observed in the *vermiform process* in this case; its point was strongly adherent to the parietal peritoneum, and the process here dilated to the size of a small plum, by purulent deposit. The tube was constricted above this enlargement, the mucous membrane lining which was ulcerated.—(Translated from the *Hygiea*, December, 1859, for the *Dublin Medical Press*, October 3, 1860, by W. D. MOORE, M.B., etc.)

III.—*Epithelial Cancer of the Larynx.*

Primary cancer of the larynx is very rarely observed. In the present case, under the care of Dr. Alderson, in St. Mary's Hospital, London, the patient was a stout, plethoric man, aged forty-eight. He had complained of his throat for a year before his admission to the hospital, sometimes very seriously. A day or two before that time he had spit up some black matter, and subsequently some blood. He had much difficulty and stridor in respiration, and his breath was very fetid. Two days afterward, his dyspnœa became so alarming that tracheotomy was resorted to. Pneumonia set in after about a week, and carried him off in thirty-four days.

Post-mortem examination.—"On opening the pharynx from behind, a large ulceration was seen occupying the whole of the posterior wall of the larynx on its pharyngeal surface, and extending below and on the left side upon the mucous membrane of the membranous wall of the pharynx. Its surface was uneven and irregular, its color pale, and its margins well defined. At the parts where it had extended beyond the back of the pharynx, the ulceration was found to be raised slightly above the level of the healthy mucous membrane, and to involve the *mucous membrane* only. It could be seen from behind, too, that a tumor occupied the right side of the larynx; the thyro-aryteno-epiglottidean folds were much thickened by deposit, and ulcerated, (this not, however, reaching the epiglottis,) and the arytenoid muscle was completely destroyed, so that the interior of the larynx could be seen between the two disconnected arytenoid cartilages. On continuing the incision made at the operation, upward and downward, the interior of the larynx was found almost completely occupied by diseased structure, which seemed to proceed from the mucous membrane lining both alæ of the thyroid body; the surface presented was exceedingly irregular, uneven, and everywhere in a state of ulceration; the vocal cords were completely destroyed. A process of the disease had extended over the cricoid cartilage into the trachea posteriorly; another had pushed between the cricoid and thyroid cartilages on the left side, and formed a little tumor outside the larynx, about the size of half a hazel-nut, over which the fibres of the crico-thyroid muscle were stretched. Another tumor, rather larger, was found involving the thyroid body on the same side. *No* enlarged glands and *no* diseased bone were found. Matter taken from any part of the ulcerated surface showed, under the microscope, large epithelial scales of every variety of form, with large, and frequently double, nucleolated nuclei. Sections from different parts of the diseased mass gave these epithelial cells, with elastic tissue from the destroyed laryngeal structures. The trachea presented two or three slight ulcerations from the irritation of the canula; its entire mucous membrane was discolored—green, gray, etc.; the purulent matter in it and in the larynx was horribly fetid. The lungs were both in a state of gray hepatization, the right one most advanced; behind its lower lobe was an empyema, localized by adhesions; between this and one of the bronchial tubes which contained most pus, a tract of lung could be traced, yellower, softer, and more disorganized even than the rest, but no canal from one to the other by which matter had passed could be made out. The heart was healthy; kidneys rather large and fatty."—(*Lancet*, November 17, 1860.)

IV.—*Aneurism of Aorta behind the Aortic Valves.*—By DR. FINNELL.

A negro, aged twenty-five, who had seemed in perfect health previously, was found dead in his bed. At the autopsy there was found an aneurism of the aorta, as large as a walnut, just above the coronary arteries. The inner coat of the sac was ulcerated in many places, exposing the middle tunic. A very small orifice existed at one point, leading into the pericardium, which was very much distended with blood, partly clotted and partly fluid. About two inches above this aneurism was another, very much like it, but of smaller size. The aorta was abundantly atheromatous in the neighborhood.—(*Transactions of the New York Pathological Society*, in the *American Medical Times*, October 6, 1860.)

V.—*Aneurism of the Abdominal Aorta.* By DR. SANSOM.

A carpenter, aged thirty-eight, was admitted into King's College Hospital, May 18, 1860. He had been seized, three months previously, with a severe pain between the hypochondria; it came on suddenly as he was going to his work, and recurred at intervals. Some time afterward, he suffered from throbbing in the epigastrium, nausea, emaciation, and malaise; his urine was passed in small quantity, and with pain in the back.

On admission, the veins of the legs and of the surface of the abdomen were enlarged and tortuous. A distinctly pulsating tumor extended from the ensiform cartilage to near the umbilicus; another small movable swelling was felt in front of this one. In the tumor a thrill and a rasping bruit were perceived; there was an exaggerated curve in the lumbar region, and the ribs bulged very much. The urine was albuminous, with small waxy casts.

On the twenty-fourth he had an epileptic fit, and subsequently several very severe paroxysms of pain, so that chloroform and morphia had to be freely given. On the thirty-first, his face became pale, and his heart beat very feebly for about two hours, when he died.

At the autopsy, an aneurism as large as two fists, involving the aorta below the root of the superior mesenteric artery, was found to have burst into the cellular tissue between the layers of the meso-colon; the blood was traced down into the areolar tissue of the pelvis. The bodies of the last dorsal and first two lumbar vertebræ had been eroded. Over the surface of the aneurismal tumor ran the vena cava ascendens and the left renal vein, flattened out by stretching. The smaller swelling was found to be the pylorus.—(*Lancet*, Am. ed., September, 1860.)

VI.—*Empyema with Malignant Disease in the Mediastinum.* By DR. W. H. DICKINSON.

W. D., aged thirty-four, was admitted into St. George's Hospital on the 27th of June, 1860. He had been ailing about six months, with cough at first, to which were at length added dyspnœa, emaciation, and inability to lie on the left side. There was never any stitch or pain in the side. When admitted, his symptoms were those of chronic pleurisy and empyema on the right side; and paracentesis was advised, but not performed until the tenth day. Three days later, another small puncture was made, but he sank and died in about forty hours.

"*Autopsy*, thirty-five hours after death. Body somewhat emaciated; abdomen tympanitic. Thorax: There was a small opening far back, on the right side of the thorax, through which, with some trouble, a probe was passed into the pleural cavity; pus was exuding from this wound. The posterior mediastinum contained a large malignant tumor, of the hard, encephaloid variety; it filled all the space between the great vessels and the lung, and had attacked the latter. The whole tissue of the lung was perfectly disorganized, and presented a texture riddled with abscesses. This texture seemed to consist principally of the remains of bronchial tubes and vessels. There were no traces of malignant disease in it; it seemed perfectly useless as a breathing organ. The upper three-fourths of the right pleura seemed tolerably healthy in structure. It was distended by a very large quantity (more than a pint) of creamy pus. There were two openings into this cavity, toward its lower part: one, which seemed to have been made with the knife or trocar, was situated close to the upper border of the fifth rib; the other, larger and more irregular, was situated at the next lower intercostal space. They both communicated, though indirectly, with the external wound. The lower fourth of the pleura was adherent, and implicated, with the base of the lung and diaphragm, in a mass of malignant disease. The left pleura was healthy, with the exception of a few adhesions, as were the corresponding lung and the heart. In the arch of the aorta were a few loose glands infiltrated with malignant disease. The muscles around the wound were thickened, and two or three small abscesses existed there. Abdomen: A great part of the diaphragm was so infiltrated by the malignant disease that none of its natural tissue could be distinguished. The malignant mass reached down the spine, lying in front of the lumbar vertebræ, nearly as low as the sacro-vertebral angle. It was lobulated on its surface, and had much the appearance of a mass of diseased glands. The liver was large and soft; its anterior edge contained a single tubercle of malignant disease, about as large as a hazel-nut." The other organs, and the large vessels, were unaffected.—(*Lancet*, Am. ed., December, 1860.)

VII.—*Contribution to the Pathological Anatomy of the Pancreas.* By DR. J. KLOB.

According to Dr. Klob, alterations of the pancreas, analogous to those seen in the *nutmeg* liver, may occur from the same causes, viz., from valvular disease of the heart, or from chronic pulmonary affections. They may also be induced by obstructions to the current in the vena cava or its ramifications within the liver.

At the outset, the pancreas is enlarged, gorged with liquids, and its subperitoneal areolar tissue is œdematous. On cutting into the gland, its lobules are found to be yellowish white, and the interstitial areolar tissue more or less reddened and infiltrated with serum; to this infiltration is due the enlargement of the organ. Microscopical examination detects in this interstitial texture numerous elements of new connective tissue. The acini and ducts exhibit no other alteration, except that there are fewer fatty granules in the acini than usual.

Somewhat later, the gland is seen to become smaller, while its consistence becomes considerably firmer. The yellowish-white or pale reddish-yellow color is more uniform; the new connective tissue, contracting as it organizes, increases the lobulation of the organ. Sometimes the compressed lobules are studded with molecular deposits of carbonate of lime; or we may observe fascicular crystals, probably of margaric acid, from the atrophied fatty tissue.

The whole organ may be involved in these changes, or they may be much more marked at certain points. Dr. Klob has seen them generally at the left extremity, more rarely in the body of the gland, and very rarely in the serous coat only. These partial degenerations are sometimes very marked, and then the affected part is replaced almost wholly by a fibrous mass, in which may be here and there detected the remains of the parenchyma, as well as cysts of variable size, formed probably from portions of parenchyma isolated by the contracting connective tissue.

Owing to these fibrous masses, the flow of bile through the common duct may be materially hindered, so as even to cause death.

Besides the lesions now described, interstitial hemorrhages may be induced by the same causes. Dr. Klob has seen them only in cases where the interference with the portal vein was very marked. Capillary apoplexies, of very small extent, would seem to be sometimes quite frequent in *cirrhosis* of the pancreas; in fact we may often observe pigmentary deposits or small bloody cysts in the contracted connective tissue.—(*Gazette Hebdomadaire*, October 12, 1860, from *Œsterreichische Zeitschrift für praktische Heilkunde*, 1860, No. 33.)

VIII.—*On Movable Spleen.* By PROFESSOR ROKITANSKY.

Professor Rokitansky mentions three cases of this abnormity.

In the first, that of a young woman, aged twenty, who had undergone the Cæsarean section, the spleen was lying on the right ilium, its hilus upward; the organ was attached to a pedicle, consisting of the elongated and thinned pancreas and the splenic artery, the former being in three spiral coils around the latter; adhesions had formed between the spleen and the surrounding peritoneal surfaces.

In the second, that of a woman aged forty-six, the spleen was in the left iliac region, attached to a long pedicle and to the omentum.

In the third, that of an insane woman aged sixty-nine, the spleen was small, its capsule thickened and detached from its parenchyma; false membranes connected it with the sigmoid flexure and with the small intestines, as it lay at the left of the upper pelvic opening. It was attached to the gastro-splenic ligament, which was twisted upon itself, and split up into several strands; the splenic artery was elongated, contorted, and thin, at its division very narrow, and its branches obliterated and here and there ossified. The vein was altered in the same way. The pancreas was in every way normal.

Dislocation of the spleen generally occurs in females, as a consequence of enlargment of the organ, its ligaments being probably also relaxed. In descending, the spleen rotates, so as to twist its pedicle and narrow its vessels. This interfering with the supply of blood, may induce degeneration of the organ, or even the death of the patient.—(*Brit. and For. Med.-Chir. Review* for October, 1860, from *Zeitschrift der Gesellschaft der Aerzte*, 1860, No. 3.)

IX.—*Perforation of the Appendix Vermiformis by an Intestinal Concretion.* By A. M. Vedder, M.D.

J. S., a boy aged eight years, had for several weeks complained occasionally of abdominal pain. September fifteenth, he had pain in the right side, extending high up; was chilly; and vomited. The next day his mother remarked the distention of his abdomen. The symptoms of peritonitis now developed themselves, with diarrhœa, and vomiting of greenish liquid; and in ten days the child died. Several days before death, fluctuation was observed in the right iliac region.

An autopsy showed patches of lymph over the intestines, and injection of the visceral peritoneum; adhesions existed, particularly near the right iliac region, where about a gill of pus was effused. On making pressure on the intestines, air bubbled up in this liquid. A hard, rough, acorn-like concretion, composed of phosphate and carbonate of lime and amorphous matter, with four small seeds as a nucleus, lay in this pus; it had evidently escaped through a ragged opening at the root of the vermiform appendix, around which, as well as within the appendix, the mucous membrane was thickened, softened, and highly injected.—(*American Medical Times*, November 3, 1860.)

X.—*Foreign Body in the Appendix Cœci.* By F. A. Howe, M.D., of Newburyport.

A child, a little over four years of age, was observed by his friends, early in the past summer, to lose flesh and strength. In July, he had occasional attacks of nausea and vomiting; and on the twenty-seventh he swallowed a nickel cent. This was passed at stool the next day. Next morning he had fever, and peritonitis set in, to which he succumbed in sixty hours. He complained of no abdominal pain, but only of tenderness, throughout.

On post-mortem examination, there were evidences of acute peritonitis; in the pubic and left iliac regions the viscera were concealed by a thick layer of coagulated lymph, beneath which were several ounces of very fetid ichorous pus. "The appendix vermiformis was found much enlarged, and tightly twisted upon itself near its junction with the cœcum, while the other end extended quite to the left of the median line, and in this position it was bound by firm adhesions. Its appearance was very dark, nearly gangrenous. From an opening in its presenting surface, at least two lines in diameter, pus flowed freely, and seemed to have been conducted by the adhesions of the parts into the left iliac region." Within the appendix was found a hard concretion of the size of a large bean, formed concentrically about a small double oat. Its chemical composition is not stated.—(*Boston Medical and Surgical Journal*, October 18, 1860.)

XI.—*Invagination of five inches of the Ileum into the Colon.* By Dr. E. S. Thompson.

A farmer's boy, aged fifteen, was admitted into King's College Hospital, London, for catarrh and slight rheumatic pains. A few hours afterward, he was seized with abdominal pain, vomiting, and purging of blood and mucus. A tender and resistant mass, as large as a fist, was felt in the right iliac fossa. The symptoms became those of intussusception, with complete obstruction; on the seventh day collapse occurred, terminating in death on the tenth.

"*Post-mortem examination.*—The intestines were found to be loosely adherent to one another, and to the abdominal parietes, by recently effused lymph; the small intestines were congested and filled with fæcal matter; and the transverse colon was distended with flatus. On laying open the large intestine, a portion of the ileum, about five inches in length, was found invaginated within the cœcum and ascending colon, and tightly girt by the margins of the ileo-cœcal valve; the constricted part was highly congested, breaking down under the finger, and almost in a state of mortification."—(*Lancet*, Am. ed., October, 1860.)

XII.—*Obstruction of the Bowels from Adhesion to the Uterus.* By J. H. ALDRIDGE, M.D., of Southampton.

Mrs. S., aged fifty-seven, the mother of five children, had a severe attack of flooding in 1858. In February, 1859, symptoms of obstruction of the bowels came on, and became more and more aggravated until she died, on the tenth of April. Stercoraceous vomiting had existed for some weeks before the fatal issue, which seemed due to exhaustion.

Autopsy, two days after death.—The abdominal cavity alone was examined. The intestines were smeared with a yellowish, watery, offensive liquid, like that which had been vomited; but this may have escaped from the tube after death. The small intestines generally were greatly distended with gas; the ileum was highly inflamed throughout almost its entire length. Near its lower end were numerous dark-colored patches, of varying size, where the whole thickness of the wall was gangrenous. For several feet above the ileo-cœcal junction, the gut was so softened as to tear when one coil was moved upon another. Here the contents were tenacious and putty like, but on the upper portion the same watery matters were found as had been vomited during life. The colon was nearly empty.

It was therefore evident that the obstruction was low down in the ileum, and on removing the intestines with the pelvic viscera, it was found that the gut alluded to was firmly attached to the posterior surface of the uterus in such a manner as to form a right angle. The womb itself was in a state of cancroid degeneration, being converted into a mass of epithelial cancer.—(*Lancet*, Am. ed., December, 1860.)

XIII.—*On the Morbid Appearances in Death by Cold.* By FRANCIS OGSTON, M.D., of Aberdeen.

(1) A woman, forty-four years of age, a vagrant, was found dead by the roadside, on the morning of April 24th, 1860. She had been drinking whisky when last seen, the evening before; the night had been stormy, and there was snow on the neighboring high grounds at the time.

The body "was lying on its right side, the clothes wet, the arms by the sides, the knees approximated, the left knee fully, the right knee partly bent, the eyelids closed, the pupils natural, the mouth half open, the expression of the countenance placid, and the face, the outside of the left arm, and the fronts of both knees of a bright red hue, contrasting with the pallor of the rest of the surface, the back included, which everywhere showed well-marked cutis anserina.

"The appearances at the inspection which followed were as under: Scalp bloody; arachnoid membrane thickened and opaque; cerebral sinuses empty; blood in moderate quantity in the veins on the surface of the brain; cerebral mass paler, and containing less blood than usual; the cavities on each side of the heart, and the arteries and veins opening into them, distended to an unusual extent with blood, mostly in a fluid state, but mixed with a few red and colorless (fibrinous) clots. The blood in the heart and elsewhere nearly of the hue of arterial blood, and, unless when in bulk, after a few minutes' exposure to the air assuming wholly that appearance. Frothy mucus in the larynx and trachea; mucous coat of the trachea minutely injected; clusters of small petechiæ on the interior of the stomach, whose contents (milk curd) exhaled a spirituous odor; liver a good deal congested; the remaining viscera of the abdomen remarkably pale and bloodless; urinary bladder enormously distended."

(2) A man aged thirty, a street porter, traveling on foot on a very cold night, drank some whisky and ale at a tavern; he then got on a cart, to sleep while riding, and when the party stopped, having gone eight miles, he was found to be dead.

Dr. Ogston saw the body "in its original position on its back in the cart, with blood in moderate quantities in the nostrils, and on the face, hands, and clothes;" (he had been struck by one of his companions on the way;) "the joints rigid, the arms by the sides, and the knees half bent. Dusky-red patches were observed on the forehead, right side of the face, the chin, the outside of the right and inside of the left thighs, and on the insteps of both feet; with these exceptions, the front of the body, including the lips, markedly pale; dependent parts of the trunk and limbs livid.

"At the subsequent inspection, the following appearances presented themselves: Scalp pale; arachnoid membrane thickened and opaque; clear serum, rather abundantly under the arachnoid, in the cerebral ventricles, and at the base of the skull; excepting some fullness of the superior longitudinal sinus, the cerebral veins and sinuses contained but little blood; the mass of the encephalon unusually pale and bloodless; reddish frothy mucus in the trachea, and in considerable quantity in the bronchi; distinct œdema of the left lung; fluid blood in large quantities in the cavities on both sides of the heart, and in the arteries and veins connected with them; and the blood here as elsewhere, as in the previous case, presenting, except when in mass, a rich crimson arterial hue; the contents of the abdomen unusually pale and bloodless; a quantity of brownish fluid, smelling of beer, in the stomach; bladder enormously distended with clear urine."

Dr. Ogston remarks on the analogies observable between these cases and four others, published by him in the *British and Foreign Medico-Chirurgical Review* for October, 1855; but he very justly says that further observations are required to enable us to assume that like appearances are necessarily to be found in every case of death by cold, even in its least complicated form. The subject is not without interest in a pathological point of view, although it is chiefly important in connection with legal medicine.

Bi-Monthly Periscope.

SURGERY.

SOME REMARKS ON A PECULIAR AFFECTION OF THE KNEE-JOINT. By *Francis James Lynch*, M.D., Physician to the Loughrea Workhouse and Fever Hospital.—Mr. Mayo, in the eleventh volume of the Medico-Chirurgical Transactions of London, directed the attention of the profession to a form of disease in the knee-joint, termed by him " An acute form of ulceration of the cartilages of the joints ;" and, subsequently, in his work on Human Pathology, p. 90, he further alludes to it, under the heading of "A class of cases of rare occurrence." Sir Benjamin Brodie, Mr. Hawkins, Mr. Key, Mr. Wickham, and others, have since published remarks on the subject; and most surgeons in Great Britain and Ireland in extensive practice are, doubtless, familiar with the disease, and its appropriate treatment; still, as it is rather a rare form of disease, the following observations and cases may not be wholly devoid of interest.

The disease is mostly observed in persons who have been subject to rheumatism, or to rheumatic gout, and is often brought on by exposure to damp and cold; the patient, after suffering from more or less acute synovial rheumatism of a migratory character, in the wrist, elbows, knees, and other joints, will suddenly complain of intense pain in one knee, where the inflammatory action seems to concentrate itself. The limb is almost always in the extended posture, the heel resting on the bed. The swelling, even at the commencement, is considerable, occupying the knee, the lower third of the thigh, and the upper third of the leg; it is not circumscribed above or below, but gradually tapers away, and is lost in the thigh and leg. The skin covering the affected part of the limb has a remarkably glossy, bloodless hue, resembling in color white marble. It is exquisitely tender to the touch, and the swelling is found to be uniform, firm, and elastic; sometimes a crackling is felt under the examining finger, and at times slight œdema, or pitting on pressure, exists. The joint is the seat of constant pain ; sometimes dull and throbbing, at other times lancinating and severe, with frequent and intensely painful exacerbations. The tenderness is very great, even in the skin, and the least pressure cannot be borne. Moving the toes, or shaking the bed, or walking heavily across the room—in fact, whatever occasions the slightest disturbance or movement of the limb—causes intense agony. There does not seem to be much, if any, effusion into the joint; and the usual prominences about it cannot be easily detected, owing to the thickened condition of the soft parts, and the extreme sensitiveness of the skin. Frequent spasmodic twitches in the limb increase the patient's sufferings, and interrupt the snatches of sleep, which anodynes, or exhausted nature, at times induce. From the commencement, there is a good deal of febrile excitement; nausea, anorexia, thirst, disturbed rest, quick pulse, heat of skin, and other marks of constitutional derangement, exist; the countenance is expressive of much pain and anxiety, and, as the disease progresses, emaciation, increasing debility, perspirations, and frequently recurring rigors, are observed. In this condition things may remain for weeks or months, when, in the majority of cases, either from the effects of remedies, or, in rarer cases, from apparently the unaided efforts of nature, the urgent local and constitutional symptoms gradually or abruptly abate, and the patient ultimately recovers, with the joint apparently anchylosed; but in process of time a limited degree of motion sometimes returns, only to a slight amount. Ultimately, however, after a year or two, the patient is able to walk without much lameness. The swelling never completely subsides; the patella is more or less fixed; the hollows on either side of the ligamentum patellæ are permanently filled up, not from effusion into the joint, but from thickening of the exterior tissues.

Owing to the limb resting for such a length of time in the extended posture, troublesome sores and excoriations are apt to form on the heel and nates; for months after the subsidence of the acute symptoms the patient is unable to rest on the limb, and its premature use will surely reproduce the original symptoms. Occasionally, during the acute stages of the disease, a degree of tenderness and some fullness is felt in the course of the femoral vessels as high as the groin, where an enlarged gland can be sometimes felt; showing that, in some instances, the venous and absorbent vessels participate in the existing inflammatory action. Such is the progress and termination of the disease, in its milder and most favorable forms; its leading features being well summed up by Mr. Hawkins in the following extracts from one of his clinical lectures on the subject, viz.: "1. Very acute tenderness of the skin, resembling, in this respect, hysterical affections of the knee. 2. Great aggravation of pain on moving the limbs, or the bed on which they lie. 3. A pale, white, glossy appearance of the skin. 4. The swelling is peculiar, differing from that of simple synovial inflammation; for, while the swelling in the latter extends around the joint alone, in this disease it extends around the lower part of the thigh, and the upper part of the leg; it pits on pressure; and you can feel a sensation of crackling beneath the finger." Mr. Hawkins believes that the disease commences in the periosteum, covering the lower end of the femur; and that after involving the areolar membrane external to the capsule, it passes thence to the synovial membrane and cartilages of the joint. At all events, it is probable that the inflammation originates in the areolar and fibrous tissues external to the joint. If, as occasionally happens, the disease is supposed to be rheumatic gout, or common synovial rheumatism, and is treated by colchicum, and afterward by hydriodate of potash, the patient will suffer for months from the violence of the pain, and the attending irritative fever, escaping ultimately with a joint more or less completely anchylosed, or the cartilages and synovial membrane of the joint become ulcerated and disorganized; and matter forms in and around the joint, running down the patient's strength, and either ending fatally, or rendering amputation of the limb necessary for the preservation of life. In the vast majority of cases, however, there is no tendency to the formation of matter within or around the joint; the cartilages are absorbed; and false anchylosis, without any accompanying suppuration, is established. If the disease be early recognized, rapid mercurialization of the system, and local depletion, will quickly restore the joint to its normal condition; even at a more advanced period, the same line of treatment will, in the vast majority of cases, arrest further mischief, and relieve in a very marked and satisfactory manner the local and constitutional symptoms, which begin abruptly to disappear as soon as the mercurial action is established. The painful condition of the limb pending the mercurialization of the system is often remarkably relieved by local sedative applications, among the most potent of which is a lotion of cyanide of potassium dissolved in water, (four grains to the ounce,) applied tepid. In general, warm applications are preferred to cold; and French wadding, or carded wool, around the joint and limb, with a pad under the heel, will be grateful and useful. Generally speaking, counter-irritation, by blisters or otherwise, does more harm than good, even on the decline of the disease. When the acute symptoms have wholly subsided, and the patient is able to rest a little on the limb, the Buxton waters and a judicious course of shampooing tend powerfully to restore a certain degree of motion to the joint. During convalescence, there are sometimes returns of severe pain, which are best relieved by the cyanide of potassium lotion, or by belladonna—two drachms of the extract in an ounce of water, smeared over the seat of pain.

In the acute stage, the stomach is so much disordered that opium, in any shape, does more harm than good, when taken internally to relieve pain or produce sleep; but I have found Battley's sedative liquor to be, when a sedative is urgently required, the most preferable form, far more so than any of the preparations of morphia. During convalescence, profuse perspirations are common; here the liquor cinchonæ, and eight grains of tannin, every night, will often check this exhausting symptom. A flannel bandage, using very moderate pressure, from the toes upward, is useful; but bandaging should not be attempted until *all* pain and tenderness cease. When the disease rapidly disorganizes the cartilages and other textures of the joint, or when a similar result follows a protracted attack, the case assumes the features of ordinary acute or sub-acute ulceration of the cartilages of the joint, and requires a similar treatment.

There is a well-known form of acute inflammation, which has been well described in this journal by the late Mr. M'Dowel, attacking the periosteum and articulating ends of the bones—in the vicinity of some of the larger joints, in certain states of the system, rapidly extending to the synovial membranes and cartilages of the contiguous articulations, and ending speedily in purulent effusion into and around the joint, absorption of the cartilages, necrosis of and separation of the epiphyses of the bones, thickening and separation of the periosteum, and other morbid changes, which is not to be confounded with the disease under consideration; such cases occur after parturition, or as a sequel to scarlatina, erysipelas, small-pox, typhus fever, or what has been termed diffuse inflammation. Their course is rapid: several articulations are attacked in succession; a blush of redness, sometimes faint, sometimes vivid, is observed on the surface: the febrile disturbance quickly assumes the typhoid rather than the irritative character; and mercury and all other modes of treatment are mostly useless.

The following cases, illustrative of the above remarks, are extracted from various papers on the subject, and a few of them have occurred in my own practice. The disease may, doubtless, affect other joints, but I have only seen it in the knee; and it cannot be very common, as, in twenty-five years' extensive experience, I have only met with three or four instances of it.

A married female, aged forty, after suffering from an attack apparently of rheumatic gout, flying about from one joint to another for several weeks, was suddenly seized with violent pain in the right knee-joint, accompanied by swelling and great tenderness. Her medical attendant in vain pressed the mercurial treatment, it would not be listened to, and the lady continued to suffer severely for some weeks. Colchicum, hydriodate of potash, and local depletion having been had recourse to without any advantage, I found her, about the third week of the disease, in the following condition: The knee was much swollen, the swelling being greatest at the joint, and tapering upward as far as the middle third of the thigh, and downward to the calf of the leg. The integuments are of a pale, glossy, white color, without a trace of redness; exquisitely tender to the touch, particularly over the joint; and rather hot. There is a severe throbbing pain in the joint, chiefly felt at its inside, and much increased by the slightest motion of the limb, or by walking heavily across the floor; occasionally, violent pain of a lancinating character darts across the joint. The swelling is elastic, free from any enlarged veins, and does not pit on pressure. A good deal of tenderness exists along the femoral vessels, to the groin, where a few enlarged and tender glands can be felt. The natural projections and depressions around the joint are obliterated, but apparently more from effusion outside than within the joint. The limb lies in the extended posture, and the patient dreads the slightest movement of it, or of the adjoining portion of the bed. The heel is very painful, owing to the motionless condition of the limb. There are frequent spasmodic twitches in the muscles; and the entire limb feels hot, but seems cold to the patient, so as to oblige her to keep it wrapped up in flannel and carded wool. There is great uneasiness in the popliteal region—a feeling of distention there, as if the skin would burst. There was total want of appetite; great thirst; evening exacerbations, characterized by heat of hands, flushing of face, and increased heat of skin. She had chills every day, and perspired copiously at night; the pulse was 100; she had got very thin; slept very badly; and often suffered from nausea and vomiting. Pressure along the surface of the tibia, and over the femur, where it is most superficial, caused great suffering. The countenance was expressive of much anxiety; and bedsores were beginning to form.

Fomentations and leeches gave temporary relief; opium, in any shape, could not be borne; three grains of blue pill were given every four hours; the bowels were attended to; and a lotion composed of sixteen grains of cyanide of potassium and four ounces of distilled water applied tepid, whenever the pain becomes severe.

During the next five or six days, there was but little change in the patient's condition; but extraordinary relief to the pain followed each application of the lotion—she called it the magical bottle.

On the seventh day moderate ptyalism set in, and was followed by complete relief to the pain, and speedy subsidence of the constitutional disturbance.

A long period, however, elapsed before the patient could leave her bed. Blisters, to accelerate convalescence, did no good; and a very cautious application of pressure and support, by means of suitable padded splints and bandages, after the acute symptoms had long completely disappeared, could not be endured. Later still, a journey to Buxton was with difficulty accomplished. Considerable advantage was derived from the use of the waters; but more particularly from a well-directed course of shampooing.

Three years, however, after the first onset of the attack, and notwithstanding the most careful attention, the motions of the joint were very imperfectly executed; and, although the lady walked without a stick or support, the knee could be only very slightly flexed, and the patella was only very partially movable.

Jane Williams was admitted into the Loughrea Union workhouse, on the 10th of June, 1856. On admission, the right knee was very much swollen, exquisitely tender to the touch, of a pale glossy hue; the swelling being greatest at the joint, and extending upward and downward for some inches, gradually diminishing, until it was ultimately lost in the thigh and upper third of the leg. The skin over the seat of the swelling was perfectly colorless, and presented an appearance very similar to what is observed in phlegmasia dolens. There was no œdema, the swollen parts being rather springy and elastic. The shape of the joint was completely lost, the usual depressions and prominences being obliterated. The patient lay on her back, with the limb in the extended posture, and could not endure the slightest change of position either of the limb or body; there were occasional sharp pains darting through the limb and joint; and a dull constant feeling of uneasiness, more than pain, was felt in it. The sleep was much disturbed by painful startings of the limb; toward morning, profuse perspirations occurred, and at several periods during the day alternate chills and flushes of heat were perceptible. The pulse was 120, and weak; the countenance anxious and depressed; the appetite wretched; much emaciation and debility existed; there were thirst, despondency, occasional nausea, and rejection of food. The patient was a strong, middle-aged woman, who had several attacks of migratory, but not severe rheumatism. A month before admission she caught cold, and was seized with violent pain, accompanied by swelling of several joints in succession. After struggling for a month against the disease, without medical assistance, the pains left the other joints, and the right knee became suddenly swollen, and the seat of acute pain.

Two grains of calomel, with one-fourth of a grain of opium, given three times a day, produced ptyalism in six days, when all painful feelings in the joint and limb completely and suddenly ceased; but a considerable degree of tenderness existed for months, and several weeks elapsed before the limb could be put to the ground. After some months, strapping the limb with plaster of gum-ammoniac with mercury, spread on leather, seemed to give much relief and support to the limb, coupled with a well-adjusted bandage. A moxa, and afterward a caustic issue, were tried without advantage; but ultimately she acquired considerable use of the limb, so as to be able to walk without much lameness, and without support. But after an interval of four years, when I again saw the patient, the joint was imperfectly anchylosed, little motion existed, and the patella was only partially movable.

As I have already mentioned, the disease generally terminates, in its milder forms, by a gradual disappearance of all the symptoms; more frequently, anchylosis, to a greater or less extent, results; in other instances ulceration of the cartilages of the joint, without any formation of purulent matter, ensues, giving rise to febrile symptoms, first of an inflammatory, then of a typhoid character, which speedily run down the patient, and destroy life, even in cases where active and appropriate treatment has been employed from the onset. The following case illustrates this latter mode of termination.

A girl, aged twenty-two, liable to rheumatism, and accustomed to vicissitudes of temperature, admitted under Sir B. Brodie, into St. George's Hospital, in June, 1827, after laboring under rheumatic pain in the elbows and shoulders for a month, was suddenly seized with exquisite pain in the right knee, increased on pressure, and aggravated by every motion of the joint. The pain was principally referred, not to the knee itself, but to the thigh-bone immediately above it. The swelling extended from the upper part of the thigh to the leg below the knee, being most conspicuous in the immediate neighborhood of the knee-joint, and thence gradually diminishing, above and below, without any defined termination. The swelling was very considerable, glossy, tense, elastic, under-colored, exquisitely tender to the touch, resembling in color white marble; and both the pain and enormous swelling had occurred suddenly, the day before. There were quick pulse, hot skin, brown furred tongue, and a countenance expressive of anxiety and suffering.

Three weeks' treatment by leeches, salines, calomel, and opium nearly removed all the symptoms, both local and constitutional. Accidental exposure to cold, however, reproduced them; and, notwithstanding a repetition of the treatment which had been before successful, along with blisters, and the establishment of an issue, painful startings of the limb ensued, and other symptoms of the ulceration of the cartilages, which were rapidly undermining her strength, when an attack of peritonitis carried her off, in two months from the commencement of her illness.

On dissection, the cartilages investing the condyles of the femur, the head of the tibia, and the patella, were ulcerated, and the cancelli of the bones exposed beneath; the periosteum was easily separable from the bone for some distance up, and the bone itself was vascular. In this case it is probable that recovery would have taken place, without much, if any injury to the point, had not a relapse from imprudent exposure to cold taken place, as the treatment was prompt and apparently successful at first. I should mention, that not a particle of purulent matter was found within or around the joint, but some blood was effused into it. Although, in general, there is not much tendency to the formation of purulent matter in the milder forms of this disease, many cases are recorded of its running a much more rapid and destructive course, disorganizing the joint, and occasioning extensive purulent depositions in the joint and limb, either among the muscles, or between the periosteum and bone, or in all three situations. Thus, in a case adverted to by Mr. Hawkins in the twelfth volume of the *Medical Gazette*, and in which the symptoms were exactly similar to the last case, as regards the local symptoms and constitutional disturbance, the patient gradually sank, after much suffering; and, on dissection, the cartilages were found to be extensively ulcerated; there was no purulent matter within the joint, although a good deal of matter was found, nearly the whole length of the thigh, among the muscles, near the bone. The periosteum of the femur was much thickened and condensed for some distance above the knee, and the bone was vascular. In another instance of this severe form of the disease, narrated in the 24th volume of *Johnson's Medico-Chirurgical Review*, p. 23, the patient died in a typhoid condition; and, on dissection, the principal seat of the disease was found to be in the periosteum and areolar membrane immediately exterior to it; the former was stripped from the femur throughout its lower half, and was lying loosened and dead in the midst of pus; the articular cartilages were ulcerated; the joint contained pus, which communicated, by an ulcerated opening through the synovial capsule, with matter on the exterior of the joint. In the following case, extracted from Mayo's work on Pathological Anatomy, the disease ended favorably in anchylosis, apparently uninfluenced by treatment: A young woman, twenty-seven years of age, six months after labor, was seized with pain and swelling of the wrist; the next day, the right knee was attacked in like manner. The following day, the pain and swelling left the joint first affected, and attacked and settled in the left knee. Six weeks after the commencement of her illness, Mr. Mayo saw the patient. The thigh and leg were swollen, with serum effused into the areolar membrane; the joint contained no fluid; the pain in the knee was very acute and constant, and increased by the least motion; the patient lay on her back, with the knee straightened; leeching gave no relief; cold applications and fomentations were equally inefficacious; repeated blistering appeared at one time to be of service; small doses of calomel and opium were administered frequently during a few successive days, with no advantage; at length the pain seemed to abate spontaneously; the swollen state of the limb gradually subsided; the patient recovered the appearance of health, but the joint was wholly immovable.

Mr. Syme, in the number of the *Lancet* for April 19th, 1856, p. 437, makes some remarks on a form of articular disease which has some points of resemblance with the affection I have attempted to illustrate. Professor Syme's description is as follows: The disease is generally met with in rheumatic subjects, and, after shifting from one place to another, fixes itself in the affected joint. In other cases it appears suddenly, and as a sequel of some feverish disturbance; it is hardly ever met with in the ball-and-socket joints, preferring the hinge-joint articulations.

The symptoms are: severe, deep seated pain, aggravated by pressure or motion, with exacerbations at night, and on the approach of rainy weather; diminution or complete loss of muscular power, with uneasiness in the limb generally, or in the nearest joint; numbness, or want of proper sensation; more or less swelling, of an unyielding kind, confined to the seat of the articulation. It ends, after weeks or months, in recovery, with more or less stiffness in the joint, or in suppuration and ulceration of the cartilages. When the joint is examined at an early period, the cartilages are found eroded, with a little bloody fluid in the cavity of the joint. Internal medicines, the usual local remedies, such as fomentations, poultices, leeches, blisters, and issues, are useless; but the application of the actual cautery, used while the patient is under the influence of chloroform, is said to be wonderfully efficacious. The disease which Mr. Syme describes seems to be confined to the synovial membrane and cartilages of the joint, and to be unaccompanied by any diseased condition of the periosteum, or of the bone, in the immediate vicinity of the articulation.—(*Dublin Quarterly Journal of Medical Science*, November, 1860.)

Editors' Table.

Annual Address before the Philadelphia Medical Society. By Dr. R. La Roche.—In place of a brief notice of this classical and instructive address, we would gladly enlarge on its chief features, and draw not a little from its pages, were we allowed to do so by the exigency of the occasion, which precludes further talk in the present number of our journal. The theme chosen by the author is the journey of Horace from Rome to Brundusium, narrated by the poet in the fifth Satire of the first Book. Seldom, if ever, was there so illustrious a company of travelers as in this instance, when Horace was associated with Virgil, L. Varius, and Plotius Tucca, the two latter of whom enjoyed a reputation as poets which "nearly equaled at the time, at least, that of their companions." But the journey was not undertaken by these favorites of the Muses alone and for their gratification in quest of the picturesque and sublime. They were adopted for their agreeable qualities by Mæcenas, Coccius, and Fonteius Capilo, who were sent to Brundusium as peace commissioners, to heal the differences between Augustus and Antony.

Dr. La Roche did not deem it advisable to make the Satire in which Horace gives an itinerary of his travel as only Horace could do, a text for commentary on the freshness and originality of the great Roman poet, and of the subtle volatile essence with which his poetry is pervaded, nor the illustration of his life and character by his own works. Our author has left it to others to show Horace in the light of a truly refined Epicurean philosopher and an advocate of temperance in its largest and most comprehensive sense. His leading canon of taste—the *modus in rebus*, is also applicable to ethics and to the pursuit of all the enjoyments of life; it shows itself, as a late critic happily says, in the "mixture of critical severity and charitable toleration which went to make up Horace's character as a man." The address is chiefly taken up with an examination of the route of travel of the eminent Roman party from Rome to Brundusium in its medico-topographical and associated archæological relations. The road traverses the southern part of the Campagna, and nearly the whole length of the Pontine Marshes, and naturally invites to a disquisition on the successive changes which these regions have undergone in cultivation, population, and health, during the ante-Roman, the ancient Roman, and the modern Roman periods. The taint of impure air has always manifested itself in different districts and spots in these regions; sometimes extensive and virulent when the cultivation of the soil and with it concomitant draining was neglected; and at other times rendered almost harmless by its extreme circumscription under better hygienic conditions in the face of the country, and by the industry of the people inhabiting it. The great central locality for periodical fevers and their common adjuncts was the Pontine Marshes, which have baffled consuls, emperors, and popes in all their efforts and engineering skill to drain them to the desired point of desiccation and to fit them for the hands of the husbandman and the shepherd. Partial success has attended at different times the labors of these rulers, and if we were to designate one as more eminently successful in this respect it would be Pope Pius VI. The entire subject is carefully scrutinized by Dr. La Roche in his customary careful spirit of research and painstaking criticism. In one of the *apropos* in the address, all of which we receive in good part, the author gives a sketch of the topography of ancient Rome, and the spots within the city walls which were most liable, from their low and primarily marshy condition, to produce disease. By the large majority of his readers the details will be found to be as new as they are instructive. The address closes with an inquiry into the extent to which mineral waters were known to and used by the Romans.

RETIREMENT OF M. RICORD.—On the twenty-seventh of September, M. Ricord delivered his farewell lecture at the Hôpital du Midi, to which he had been attached for nearly thirty years, in consequence of the severe regulation now in force in Paris, compelling surgeons, officially appointed, to give up their hospitals and clinical teaching at the age of sixty. M. Ricord was born in Baltimore on the tenth of December, 1800; and pursued the more dignified course in resigning his clinical chair of syphilis, previous to the completion of his full term. The vacancy occasioned by his retirement has been filled by the appointment of M. Cusco, formerly Surgeon of the Salpetrière.

THE ETHER PATENT.—The Hon. P. F. Thomas, Commissioner of Patents at Washington, deserves the thanks of the medical profession and the public at large, for refusing to renew the patent issued to Dr. Morton and Dr. Jackson, fourteen years ago, for the exclusive employment of ether to induce anæsthesia in surgical operations. The patent expired on the twelfth of November, 1860, and Dr. Morton, some months since, applied for an extension of the patent for a period of seven years. Dr. Jackson, however, would not assign to Dr. Morton the right of extension, and remonstrated against it. On this account the renewal was not granted, and the result has been that the would-be patentee has succeeded in preserving his name from an amount of odium from which he could never have recovered. Such a boon should be as free as the air of heaven.

It is strange, passing strange, that Dr. Morton, after having achieved so wonderful a discovery, should have been so insensible to his fame as to seek for a patent right. Poverty is a thousand times preferable, under such circumstances, to the most inexhaustible riches extorted from the groans of the people. After indorsing Dr. Morton's claims, as we were induced to do last winter, we deeply regret that he should have permitted himself to go again before Congress. We sympathize with him in his poverty, brought on, as he alleges, by his attempts to introduce the use of ether, as an anæsthetic agent, to the notice of the profession and the public, and we think it is a burning shame upon our country and upon the age, that our National Legislature has not made him a liberal compensation for his great and inestimable services. If the labors of Jenner in the cause of vaccination deserved the recognition of the British Parliament, surely Dr. Morton is entitled to the gratitude of his countrymen for the sacrifices which he has made to furnish them with a safe means of preventing pain in surgical operations and in the throes of parturition.

MUSEUM OF COMPARATIVE ZOOLOGY.—Owing to the indomitable energy of Professor Agassiz, the curator and director of the new institution, within two years a fund of $225,000 and a large number of specimens have been collected, besides five acres of land given by Harvard University, with which the museum went into operation, on the thirteenth of November. It is connected with the University, and at the inauguration Professor Agassiz stated, "we have already outrun all the museums of the European Universities, excepting those placed in large capitals, and among these we would probably occupy the ninth or tenth place."

DESTRUCTION OF AN INSANE ASYLUM.—The Western Insane Asylum at Hopkinsville, Kentucky, erected at a cost of upwards of $200,000, was totally destroyed by fire early in December. All the inmates, with one exception, were saved. Had the building been protected with a metallic roof the accident would not have occurred.

ARMY MEDICAL DEPARTMENT.—The Examining Board of Army Surgeons, composed of Drs. C. A. Finley, C. S. Tripler, N. S. Jarvis, and C. H. Smith, Recorder, met in Baltimore on the twentieth of September, and found the following gentlemen qualified for the post of Assistant Surgeons in the United States Army. Their names are given in the order of their relative merit: Dr. Campbell Shorb, Dr. A. F. Mechim, Dr. Clinton Wagner, all of Maryland; Dr. D. P. Ramseur, of North Carolina, and Dr. W. F. Cormick, of Virginia.

PATHOLOGICAL MUSEUM AT THE PENNSYLVANIA HOSPITAL.—The Board of Managers of this institution recently adopted a resolution appropriating a proper apartment for a Pathological Museum, and Dr. T. G. Morton has been appointed Curator.

A NEW JOURNAL.—We have received the first number of the "American Journal of Indigenous Materia Medica," a monthly issue of thirty-two pages, edited by B. Keith, M.D., of New York.

SUPPRESSION OF THE SAVOYARD UNIVERSITY SCHOOLS.—The *Medical Times and Gazette*, November 10th, 1860, states that a decree, published in the *Moniteur*, suppresses the University schools of Theology, Law, Medicine, and Pharmacy, established at Chambéry, Nice, Annecy, St. Jean-de-Maurienne, Moutiers, Bonneville, and Thonon, declaring that diplomas of Doctors in Medicine and Pharmacy, obtained at Sardinian Universities prior to January, 1861, by persons native of Sardinia—and henceforth by annexation Frenchmen—will be considered as equivalent to French diplomas.

TREATMENT OF FEMALE DISEASES.—Dr. Horatio R. Storer, so well known by his excellent Papers on Criminal Abortion in this journal, has opened an establishment for the Treatment of the Diseases of Women, at Blue Hills, near Boston. Professor Storer and Dr. J. M. Warren are the consulting surgeons.

STONE IN THE NEGRO.—In a letter to the senior editor, dated Mobile, December 8, 1860, Professor J. C. Nott makes the following remarks upon this subject:—

"I operated to-day on a case of stone in a negro boy, and on referring to your book, it brought to mind the fact, which I had before seen stated by yourself and others, viz., the infrequency of this disease in the negro race. My experience is to the contrary. I have not been very careful in keeping notes of my operations, not expecting to write on the subject, and cannot, therefore, state accurately the number of cases operated on by myself in the twenty-five years I have been in Mobile, but the entire number is about twenty, out of which I can count up eight in negroes, two of which were last winter. The ages have been from three to twenty-five years; most of them have been boys from five to ten years.—While writing, I recollect another case, which is very remarkable. This was a negro woman in the interior of the State, who passed five at one gush after suffering several days very severely; they were sent to me by a country physician; they are about the size of olives, somewhat flattened. I have just measured them, and they are all from three-quarters to seven-eighths of an inch in diameter, and nearly as broad as long. I have heard of at least four or five others among country physicians. All my cases have been brought from counties of South Alabama."

DIPHTHERIA.—It is said that this disease has destroyed at least ten thousand lives since its first appearance in this country.

MEDICAL SCHOOLS AND STUDENTS.—The number of registered students in London, this year, is 1237, being an increase over last year of 132. There is also said to be a corresponding increase in the Provincial, Irish, and Scotch institutions. The London *Lancet* accounts for this difference by the wholesome educational regulations which are to be enforced in 1861, the British students thus taking advantage of the old regime. The number of students in Paris is also considerably larger than last year. In this country, on the contrary, nearly all the schools have diminished classes. In Philadelphia, the number is about 1050, as an offset against 1275 of last year.

DR. MCLEOD.—It affords us pleasure to see that Dr. McLeod, author of the Notes on the Surgery in the Crimea, elaborately noticed in this journal a year ago, has been appointed Professor of Surgery in the Andersonian University at Glasgow. A more able gentleman could not have been selected for this important trust.

A SYSTEMATIC TREATISE ON THE INJURIES AND SURGICAL DISEASES OF THE SCALP, SKULL, AND BRAIN AND ITS MEMBRANES.—The senior editor of the REVIEW begs leave to announce to his professional brethren that he is now engaged upon the composition of this work, and he earnestly and respectfully requests their co-operation in its construction, by furnishing him with such cases and practical reflections as may have arisen in the course of their experience. His object will be to present a complete digest of the literature upon the subject, and he trusts that he will thus be enabled to produce a work that shall be of permanent value to the healing art. Communications should be sent in at an early day. American journals will confer a favor by copying this notice.

NECROLOGICAL NOTICES.

Dr. Jedediah Cobb.—With heartfelt sorrow we record the decease of this amiable, excellent, and distinguished physician, which took place, after a lingering illness, on the sixteenth of November, at Manchester, Massachusetts. He expired in the bosom of his loving and almost idolizing family, in the sixty-first year of his age. The immediate cause of his death was ulceration of the mucous membrane of the stomach. His health had, at times, from an early period of his life, been delicate, and many years ago he experienced occasional attacks of cecitis, from one of which he came very near perishing. When we last met with Dr. Cobb, six years ago, he looked hale, vigorous, and as if he might attain to a green old age. In August, 1858, his friends first began to notice that he was losing flesh and strength, and he himself soon became sensible that there was a marked decline in the state of his health. Indeed, from this time on, although there was occasionally a slight improvement in his condition, it was apparent to every one that there was a steady but gentle descent to the grave.

The nature of his disease remained for some time uncertain. Dr. Cobb himself was under the impression for several months that he was laboring under some pulmonary affection, but he finally concurred in the opinion of his medical attendants that the chief trouble was in the stomach. Although no post-mortem examination was made, this view of the case is strongly supported by the fact that he suffered greatly from nausea and headache, and that for a month before his death he was unable to retain any animal food. His emaciation also became excessive, but at no period of his illness was there any cough.

Until within a few weeks of his dissolution, his family had been making preparations to spend the winter with him in Florida, in the hope that a change of air and the balmy breezes of the South would at least prolong his life, if not restore his health. But his strength now so utterly failed him that they were soon compelled to abandon the project, and resign themselves to their fate. During all this time his cheerfulness and spirits never deserted him. He manifested to the last a lively interest in everything that passed around him, and thus deceived not a few of his friends in regard to the real state of his health. He had evidently set his house in order, and was calmly awaiting the message that was to summon him hence. His last hours were peaceful and happy, surrounded by his wife and children, who had loved him so long and so dotingly.

Dr. Cobb was born at Gray, in the State of Maine, on the 27th of February, 1800. His early education was obtained at Hebron Academy, and he entered Bowdoin College, at Brunswick, in September, 1816, graduating at the end of four years. Of his deportment while at these institutions, we have no knowledge; that it was eminently exemplary, no one can doubt; for as the character of the youth is, so is generally that of the man in the full development of his moral and intellectual faculties. Of his parentage we are also ignorant; but that the father and mother of Dr. Cobb were excellent people is an opinion amply sustained by the pure and lofty career throughout a long life of the son. Although we do not believe that bad parents must necessarily have bad or vicious children, yet it is unquestionably true that such a result is exceedingly common, if, indeed, it is not so general as to constitute a law.

During his residence at Bowdoin College, Dr. Cobb attended some of the medical lectures there; but he afterward went to Boston, where he became a private pupil of the late Dr. George C. Shattuck, an eminent and wealthy physician, who assisted in educating a number of the most prominent practitioners and teachers of New England. He took his medical degree at Harvard University, in September, 1823. He now went to Portland with a view of establishing himself in business, but he had been there only a few months when, through the influence of his late preceptor, for whom he always cherished a warm attachment, he was appointed Professor of the Theory and Practice of Medicine in the Medical College of Ohio, at Cincinnati, whither he accordingly removed during the following summer. His journey, as he often himself told us, was a long and tedious one, attended with much fatigue, and many little incidents calculated to make an enduring impression upon one so young and of so ardent and enthusiastic a temperament. When he reached the Ohio River at Pittsburg, no steamboat could be found small enough for the low stage of the water, and he was consequently obliged to take passage with several other gentlemen in a common flat-boat, a part of their duty consisting in rowing their little craft and cooking their own food, which was not always of the choicest quality. Many anecdotes were related by the merry crew, and after nearly a fortnight of hard work they finally arrived at the "Queen City," wearied and sunburnt, but in reality all the better for their protracted voyage.

His first course of lectures in the Medical College of Ohio was delivered in the winter of 1824–25, and the second the following year, when he was transferred to the chair of anatomy, which was much more in accordance with his tastes and previous studies. The fact is, he had accepted the chair of medicine with great reluctance, conscious that his youth and inexperience scarcely justified him in assuming its weighty responsibilities. Once in the harness, however, he shrunk from no duties, and there is reason to believe that he performed his task with more than ordinary credit; certainly with the most scrupulous fidelity.

He continued in the occupancy of the anatomical chair till his removal to Kentucky in 1837; and every one acquainted with the history of the Medical College of Ohio will admit that he contributed in no small degree, during his connection with that institution, to its influence and respectability. Prosperous it could not be said to have been at any time; for the demon of discord was always at work, in some way or other, impairing its usefulness, and often threatening its very existence. As a necessary result, there were frequent changes in its Faculties, not always, by any means, conducive either to strength or harmony. The truth is, the school was constantly in trouble, and it need, therefore, not excite any wonder that Dr. Cobb should have at length accepted the corresponding chair in the newly established college at Louisville, especially when he could thus readily exchange an income of a few hundred dollars, the net proceeds of his winter's toil, for three thousand dollars, so generously guaranteed to him for three successive years by the citizens of that noble town. He owed this call not to any extraneous influence, chance, or accident, but solely to his reputation as a teacher of anatomy, which had long ere this become as familiar as a household word with the profession in the great valley of the Mississippi.

Dr. Cobb entered upon his duties at Louisville with new zeal and vigor. Most of his colleagues had, like himself, already acquired extensive fame, and no doubt could, therefore, be entertained respecting the rapid and complete success of the school. Not less than four of his colleagues—Caldwell, Short, Cooke, and Yandell—had been approved teachers at Lexington; and Miller, since so widely known through his obstetrical writings, was already established in the confidence of the citizens of Louisville as an able and judicious practitioner. In 1838, Dr. Drake was added to the Faculty, which was now one of towering strength, "the observed of all observers" in the Southwest. Students flocked to the school from all sections of the valley of the Mississippi, and soon the classes attained an unparalleled size, vieing with those of Philadelphia and the most prominent colleges in foreign countries. Although we had known Dr. Cobb during his residence at Cincinnati, having occupied for a short time the position of Demonstrator of Anatomy in the Medical College of Ohio, by which we were thus brought into more or less close relations, our acquaintance with him only fairly commenced in 1840, when we became associated together as colleagues. A warm and intimate friendship soon sprung up, which happily continued until it was dissolved by his late lamented death.

In 1852, Dr. Cobb resigned his chair in the University of Louisville, and reentered the Medical College of Ohio, with an entirely new Faculty, of which Dr. Drake formed a conspicuous member. The chief motive which induced him to take this step, which all his friends regarded as an unfortunate one, especially in a pecuniary point of view, was that he might settle his eldest son, Dr. William Cobb, a youth of much promise, in the practice at Cincinnati, where he also held the position of Demonstrator of Anatomy, under the immediate superintendence of his father. The school, however, was again doomed to sad reverses. The session had hardly commenced before Dr. Drake, one of its main pillars, sickened and died; the class was small and not particularly remunerative; and toward spring, the health of Dr. Cobb failing, he considered it his duty to resign, bidding a final adieu to anatomical teaching and medical colleges. His son also abandoned Cincinnati, and settling in Missouri, died a few years after, thus casting a gloom over his father's spirits from which he did not soon recover. After his resignation, Dr. Cobb was offered the chair of anatomy in the University of Nashville, but for the reasons just mentioned was obliged to decline it.

Thus cut loose from pursuits which had so pleasantly and so profitably occupied him for nearly thirty years, during which he was brought into contact with some of the ablest medical men of the country, he looked about in search of a new home, and finally, in the spring of 1854, settled at Manchester, Massachusetts. He had long evinced an ardent desire to live near the ocean, to behold daily its dashing waves, and to be lulled to sleep at night under its wild and moaning sounds, and he had at length found the very spot which his heart had so long and so ardently coveted. Here, amid the wildest and most beautiful scenery, which might have charmed Calypso and her nymphs, in the presence of a glorious sky, he lived in profound retirement during the summer months, surrounded by his family, devoting his time to reading and the improvement of his small farm, with little or no intercourse with the profession, but with his house always open to his friends, whom he never failed to receive with all the cordiality of his warm heart. His winters were always spent at Louisville and Cincinnati, where he was sure to meet with warm, well-tried and sympathizing companions.

Dr. Cobb had a great aversion to writing, and hence he has left no enduring monument as an author. Indeed, we do not believe that all he has ever published would, if collected, make twenty pages. Even letter-writing, except on matters of a purely business character, was a great annoyance to him. His repugnance to authorship was invincible.

But if he was no writer, he was, nevertheless, a most useful teacher. As a lecturer on anatomy it is perfectly safe to say he never had a superior, and when we say this, we mean fully what we say. As a mere speaker he has, doubtless, often been excelled, but as a teacher, clear and lucid; as a demonstrator, thoroughly and intimately acquainted with his subject; as a dissector, wielding a ready and dexterous scalpel;—in all these qualities Cobb never was and probably never can be excelled. He was the very impersonation of a neat, gentlemanly, and finished lecturer. Slovenliness, in any form, he could not brook. The cadaver must always be fresh and sweet; the dissection exquisitely finished; the table so neat that one would hardly have hesitated to make his repast upon it. It was a pleasure to see him at his daily task, preparing for his twelve o'clock lecture. From two to three hours were usually spent in this way, most of the nicer labor being performed by himself; and one could not look at the result without being reminded of the expression of the Psalmist, "Man is fearfully and wonderfully made;" without feeling that every dissection of this excellent anatomist was in truth a sermon, or, to use the language of Galen, a hymn to the Deity.

Once fairly at work before his class, Cobb enchained the attention of every student; the hour passed rapidly by, and every one that listened to him felt how much he had been instructed. His popularity as a teacher was universal; and no man ever commanded greater respect than he did in the lecture-room; for he was a most admirable disciplinarian, never permitting the slightest noise or interruption during his demonstrations. No one was more keenly alive to everything of the kind than he was. The least whisper invariably disturbed him. His voice was sweet and sonorous, and sufficiently strong to fill the largest lecture-room.

In his intercourse with the world, his profession, and his colleagues his conduct was a model. He was eminently a man of principles; expediency he scorned. His manners were polished, elegant, and graceful, his language refined and well chosen, his presence and bearing those of the accomplished and high-toned gentleman. In person he was tall and rather slender, with a fine head, a black eye, shaded by a well-shaped brow, and a face at once beautiful—almost too beautiful for a man—and beaming with benignity. In short, he was a remarkably handsome man, one that would have attracted attention in any crowd of gentlemen. His heart was full of warmth, and as genial as a sunbeam. His social qualities were of a high order, and the consequence was that he was a general favorite with all classes of people. His moral character stood out in bold relief; he was a true man, a warm friend, and a generous enemy. To cherish resentment was no part of his nature.

Dr. Cobb never was fond of the practice of his profession; he disliked its details and its worrying and exhausting cares. Throughout life, in the winter, much of his time was occupied in the dissecting-room, and this circumstance, added to the fact that his health was for many years delicate, was probably the reason why he never had much business. Had he felt inclined to cultivate practice, he might have secured any amount of it, such was his personal popularity and the confidence reposed in his skill.

One of the remarkable traits of his character was his fondness for angling and shooting. Izaak Walton has had few more ardent disciples. The Little Miami, near Cincinnati, was, for many years, during every spring, a favorite place of resort with him, and during his summer wanderings to New England, fly-fishing was one of his most agreeable occupations. Few men could bring down a partridge or a woodcock with more unerring certainty than he.

In consequence of not being engaged in practice, Dr. Cobb acted for many years as Dean of the several Faculties of the schools with which he was connected, and his accuracy as an accountant was proverbial. As a colleague, his conduct was most exemplary. In 1830 he visited Europe, partly at the instance of the Trustees of the Medical College of Ohio, to make purchases for its museum and library. In 1836–37 he delivered two courses of lectures on anatomy at Bowdoin College.

In his domestic relations no man was ever more happy. The idol of his family, he warmly reciprocated the affection and tenderness so lavishingly bestowed upon him by his wife and children. He was married in 1826 to Ann Maria Merrill, who, with two sons and a daughter, all grown up, survives him.

In making a record of the death of one whom all loved, who had so many warm friends and no enemies, who shed a genial influence upon everything with which he came in contact, who discharged so well and so gracefully all the duties of official, social, and domestic life, we feel as if the world were the worse off for having lost so excellent a citizen, especially at a time when the Republic, groaning under the effects of political strife, is so much in need of true and good men. As we stand in imagination at his grave, we recall, with a melancholy satisfaction, his many virtues, and mingle our tears with those of his family.

CHAPIN HARRIS.—Dr. Chapin Harris expired at Baltimore on the twenty-ninth of September, 1860, in the fifty-sixth year of his age. His illness was severe and protracted, confining him to his house for a number of months. In July his health gradually improved, and by the advice of some friends he was induced to visit Atlantic City, in the hope that sea-air and sea-bathing might prove serviceable to his exhausted system; but after a brief sojourn he was compelled to return, and soon afterward died in the bosom of his family.

Dr. Harris was the founder of the American Dental College at Baltimore, the first institution of the kind in the world; and he was the author of a Dictionary of Dental Surgery, a Treatise on Medical Terminology, the American Journal of Dental Science, and the Principles and Practices of Dental Surgery; a work which has passed through numerous editions, and which, together with his other literary labors, has made his name known far and wide both at home and abroad. He wielded at once a prolific and an able pen. His practice for many years was large and lucrative, and he was withal an excellent teacher. He occupied up to the time of his death the chair of the Principles and Practice of Dental Surgery. He was a graduate of medicine, and a member of the American Medical Association. His moral character was distinguished by great excellence and purity. He was tall in person, kind and affable in his manners, and universally beloved for his many good qualities.

Although not strictly of the medical profession, we pay this brief tribute to the memory of Professor Harris the more willingly because of his many virtues, and because of the great zeal and interest which he manifested in the cause of medical and dental science. At the time of his decease he deservedly occupied the very highest position in his particular department of science.

DR. H. R. ROBARDS, late Professor of Surgery in the Memphis Medical College, died on the eighteenth of October.

DR. DAVID DALE OWEN, who had earned an enviable reputation as a student of geology and the kindred sciences, died on the thirteenth of November. At the time of his decease, Dr. Owen was State Geologist of Indiana.

M. DESPRÉS, Surgeon to the Bicêtre Hospital of Paris, died early in October, in the fiftieth year of his age.

Dr. CHARLES COOTE was found dead in his bed on the thirteenth of November, death having apparently been occasioned by some cardiac affection. He was born in 1823, and having received his medical education in England, he afterward became a pupil of Virchow and Rokitansky. During the Crimean war, Dr. Coote was one of the Assistant Physicians to the British Civil Hospital at Smyrna, and at the time of his death was attached to the staff of the Middlesex Hospital.

Bi-Monthly Bibliographical Record.

AMERICAN.

Lives of Eminent American Physicians and Surgeons of the Nineteenth Century. Edited by S. D. Gross, M.D., etc. 8vo., pp. 836. Philadelphia: Lindsay & Blakiston, 1860. (From the publishers.)

Statistical Report of the Sickness and Mortality of the Army of the United States, from January, 1855, to January, 1860. Prepared by R. H. Coolidge, M.D. 4to., pp. 515. Washington, 1860. (From the Surgeon-General.)

On Diseases Peculiar to Women, including Displacements of the Uterus. By Hugh L. Hodge, M.D., etc. 8vo., pp. 469. Philadelphia: Blanchard & Lea, 1860. (From the publishers.)

The True Physician; an Anniversary Discourse delivered before the New York Academy of Medicine. By John Watson, M.D. 8vo., pp. 44. New York: S. S. & W. Wood, 1860. (From the author.)

A Practical Treatise on Mechanical Dentistry. By J. Richardson, M.D., D.D.S., etc. 8vo., pp. 427. Philadelphia: Lindsay & Blakiston, 1860. (From the publishers.)

Transactions of the Fifteenth Annual Meeting of the Ohio State Medical Society. 8vo., pp. 267. Columbus, 1860. (From the Secretary.)

Proceedings of the American Pharmaceutical Association, at the Ninth Annual Meeting, held in New York, Sept. 1860. 8vo., pp. 278. Philadelphia, 1860. (From the Secretary.)

Quackery Unmasked; or a Consideration of the Most Prominent Empirical Schemes of the Present Time. By Dan. King, M.D., etc. 12mo., pp. 334. New York: S. S. & W. Wood, 1860. (From the publishers.)

The Physician's Diary for 1861. Buffalo: Breed, Butler & Co., 1861. (From the publishers.)

Report on Insanity. By Richard Gundry, M.D., etc. Pamphlet, 8vo., pp. 59. Columbus, 1860. (From the author.)

Introductory Discourse on Speculative and Inductive Medicine. By Henry Hartshorne, M.D., etc. 8vo., pp. 19. Philadelphia, 1860. (From the author.)

Introductory Discourse on the Classification of the Animal Kingdom. By D. Hayes Agnew, M.D., etc. 8vo., pp. 16. Philadelphia, 1860. (From the author.)

An Address delivered before the American Medical Association, at the Thirteenth Annual Meeting. By Henry Miller, M.D., etc. Reprint, 8vo., pp. 28. Philadelphia, 1860. (From the author.)

Introductory Lecture to the Course on the Institutes of Medicine, in Jefferson Medical College. By Robley Dunglison, M.D., etc. 8vo., pp. 30. Philadelphia, 1860. (From the author.)

Proceedings of the Academy of Natural Sciences of Philadelphia. 8vo., pp. 361–516. Philadelphia, 1860. (From the Secretary.)

First Report to the Cotton Planters' Convention of Georgia on the Agricultural Resources of Georgia. By Joseph Jones, M.D., etc. 8vo., pp. 312. 1860. (From the author.)

An Inquiry concerning the Value of Testimony respecting Facts as they appear to a Mind partly Conscious. By T. L. Wright, M.D. Reprint, 8vo., pp. 32. Columbus, 1860. (From the author.)

Observations upon the Form of the Occiput in the various Races of Men. By J. Aitken Meigs, M.D., etc. Reprint, 8vo., pp. 18. Philadelphia, 1860. (From the author.)

An Introductory Lecture, delivered in the University of Maryland. By Edward Warren, M.D., etc. 8vo. Baltimore, 1860. (From the author.)

FOREIGN.

Compendium of Human Histology. By C. Morel, M.D., etc. Translated and edited by W. H. Van Buren, M.D., etc. 8vo., pp. 207. New York: Baillière Brothers, 1861. (From the publishers.)

On the Reparative Process in Human Tendons after Subcutaneous Division for the Cure of Deformities. By William Adams, F.R.C.S., etc. 8vo., pp. 175. London: Churchill, 1860. (From the author.)

Chemistry in its Relations to Physiology and Medicine. By G. E. Day, M.D., etc. 8vo., pp. 524. London: Baillière, 1860. (From the publisher.)

Cellular Pathology as Based upon Physiological and Pathological Histology. By Rudolf Virchow. Translated by Frank Chauce, M.B., etc. 8vo., pp. 511. London: Churchill, 1860.

Maximen der Kriegsheilkunst. Von Dr. L. Stromeyer 8vo., pp. 150. Hanover, 1861.

Traité des Maladies des Voies Urinaires. Par C. Phillips, M.D., etc. 8vo., pp. 676. Paris: Germer Baillière, 186 .

The Pocket Anatomist: being a Complete Description of the Anatomy of the Human Body, for the Use of Students. By M. W. Hilles. 12mo., pp. 263. Philadelphia: Lindsay & Blakiston, 1860. (From the publishers.)

Della Odierna Diminuzione della Podagra e delle sue Cause Saggio di Patologia Storica. Del A. Corradi, M.D., etc. 4to., pp. 58. Bologna: Gamberini, 1860.

Advice to a Mother on the Management of her Offspring. By P. H. Chavasse, F.R.C.S. Fifth edition. Fcap 8vo., pp. 255. London: Churchill, 1860.

THE

NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

MARCH, 1861.

Analytical and Critical Reviews.

ART. I.—*Traité Clinique et Therapeutique de l'Hysterie.* Par le DOCTEUR P. BRIQUET, Médecin à l'Hôpital de la Charité, Agregé Honoraire de la Faculté de Médecine de Paris, etc. Paris: Bailliere et Fils, 1859. 8vo., pp. 724.

A Clinical and Therapeutical Treatise on Hysteria. By DOCTOR BRIQUET, Physician to the Charity Hospital, Honorary Associate of the Faculty of Medicine of Paris, etc. Paris. 8vo., pp. 724.

A PHYSICIAN, who in ten years of hospital practice has made careful observations on four hundred and thirty patients afflicted with hysteria, may well claim the attention of his medical brethren when he discourses on this disease. M. Briquet has thus enjoyed rare opportunities for becoming the historian of hysteria; and the volume, whose title we have just given, must be received as evidence of the ability and critical impartiality with which he has fulfilled his self-imposed duty. It will be ours to follow in the course which he has so successfully pursued, and to repeat some of the leading facts with the accompanying numerals, with which nearly every chapter of the work is interspersed. Speculations and conjectures would be entirely misplaced on the present occasion, nor can we even indulge our readers with the retrospective lore introduced by M. Briquet, as when he gives an account of the opinions entertained by medical writers, from the time of Hippocrates down to the present day, on the causes and essential character of hysteria. It is sufficient for us to say, that all the ancient and a large majority of modern writers on the subject, taught that hysteria was a uterine affection, or rather a disease having its origin in the uterus, however numerous and diversified might be the subsequent and associated disturbance in other organs. The disorder of this organ, causing strong sexual and unsatisfied venereal desire, and the subsequent train of nervous symptoms, was, according to the pathology so long dominant, to be cured by sexual intercourse. To this view stand opposed the facts adduced in the volume before us, viz., that hysteria is met with in the other sex, and in young females before the age of puberty, and before the uterus takes on any specific action, or is either the recipient or dispenser of impressions of any kind. Nor is immunity given by the cessation of the uterine functions in a later period of life. It is known, moreover, that the disease shows itself in subjects in whom there is no uterus.

M. Briquet, under the head of "Definition," declares his belief that hysteria is a neurosis of the encephalon, the obvious phenomena of which consist chiefly in a disorder of the vital acts which serve to manifest the affective sentiments and the passions. The changes peculiar to each affective sentiment and each passion in the human species cover the field of hysteria. Every hysteric phenomenon has its true type in the different vital acts by which the affective sentiments and the passions are manifested externally. All the hysteric disorders which appear to be so anomalous, and which for a long time puzzled physicians, are nothing more than the pure and simple repetition of these acts, but augmented, weakened, or perverted. We may take any symptom whatever of hysteria, and we shall always find its model in one of the acts which constitute passionate manifestations. The author, in further illustration of his meaning, instances the case of an excitable female who has just been subjected to a sudden and strong emotion. She experiences, at the very moment, a constriction of the epigastrium, and a feeling of oppression; her heart beats strongly; something comes up in her throat and chokes her; her limbs are the seat of a wearied feeling and refuse to perform their office, so that she is on the point of falling down; or, again, she experiences a restlessness, a call for movement, which induces active contraction of the muscles. Here we have the exact counterpart of an ordinary hysteric attack with spasms. The frequent repetition of these manifestations ends in dynamic or material lesions in the organs primarily affected, and thus adds new complications to the already bewildering scenes exhibited in hysteria.

These views are, M. Briquet remarks, very different from the crude theories which can only suppose in hysteria ungratified appetites, or the inflammation, suppuration, or cancer of the genital organs, but they accord with the more philosophic opinions of Raulin and Sydenham, and many other modern writers. The testimony given by the author might have been extended had he borrowed more freely from English medical literature. In the latter, hysteria is attributed to a morbid condition of the spinal marrow, but the authors of this opinion still leave unexplained the remoter seat of the irritation, which calls into morbid action the organs under spinal influence. This difficulty, it must be confessed, stands in the way of our entire adoption of the cerebral nature of the disease, as advocated by M. Briquet.

> "Hysteria acknowledges for its chief symptoms extreme sensibility of the nervous system, various hyperæsthesiæ, among which are most prominent, pains in the epigastric region, in the left side of the thorax, along the left vertebral fossa, anæsthesia principally affecting the skin, the muscles, and the organs of the senses; spasms, particularly at the epigastrium, the sensation as of a globe mounting from the œsophagus to the throat, and of choking; finally, convulsions, which are commonly accompanied by loss of consciousness, and which end in tears and sobbing—symptoms, all of which are under the influence of the moral affections."

This may serve as a description of the essential features of hysteria, but conveys a very imperfect idea of the variety of symptoms expressive of organic disease, which follow in its train, or are associated with it. The author quotes Riverius, who speaks of it as an Iliad of diseases rather than a single disease, and Sydenham, who says that the changes of form of Proteus and of the hues of the cameleon, are not more various than the different aspects under which hysteria presents itself to our notice. Hoffmann defines it thus, "*Morbus ille, aut potius morborum cohors*," etc.

In entering on the "etiology" of hysteria, to which the *first part* of the volume is given, M. Briquet adopts the received division of causes, viz., the predisposing and the determining or exciting, although he admits that these two series of causes may run into each other, and sometimes even change their relative signification, so that a predisposing becomes by its duration an exciting cause. He studies the predisposing causes of the disease under the heads of—1, sex; 2, age; 3, the state of health of the parents; 4, the physical and moral constitution; 5, climate; 6, the social position; 7, the place in which the person has been educated; 8, the mode of education; 9, the kind of alimentation; 10, the profession or calling; 11, the passions; 12, continence; 13, the state of menstruation; 14, antecedent diseases, and especially those of the genital organs; 15, and finally, the state of health of women before the date at which the exciting causes have begun to act.

First, then, as regards "the influence of sex" in predisposing to hysteria. For those writers who look on the uterus as the exclusive seat of hysteria, or, at the least, the organic centre whence radiates all the irritations that make up the sensible evidences of the disease, the question of sex would be a useless one, since the disease, according to their theory, can only appear in females. But while the great majority of hysteric subjects are found among the latter, it is not the less clear that persons of the male sex furnish undoubted examples of its occurrence among them.

Louyer Villermay himself, while asserting that man cannot become hysteric, because, as this writer says, he has no uterus, admits, nevertheless, that he may be subjected to very peculiar nervous affections, and even convulsive attacks, analogous to those which constitute hysteria. Cases are cited from medical journals, some of them in detail, of hysteria in men. To the same purport reference is made to the inaugural theses of MM. Bonneau, Legoarent, and Desterne. M. Briquet has seen a certain number of cases of hysteria in men, the records of which he gives on the present occasion. We regret, for the sake of our readers, that we cannot reproduce them here, but room is wanting for the purpose, and we must pass on. Of the seven cases recorded in detail, five were simple hysteria, unconnected with any other disease, and two were complicated; one of these with general paralysis and rigidity of the muscles, the other with progressive paralysis, which terminated fatally. Two cases of hysteria in men have come under our own observation. We were called up in the night to visit one of them, who was suffering from a clearly marked attack, in which the *globus hystericus* was a prominent symptom. Both of these persons were excitable and nervous subjects, though differing not a little from each other in their intellectual and moral qualities. The attacks of the one could be traced to mental emotions, those of the other to indigestion arising from gluttonous indulgences and deficient exercise.

It has been alleged by those who advocate the uterine pathology of hysteria, that the cases in which the disease has been witnessed in man owe their origin to excitement of his genital organs, and non-gratification of the venereal appetite; but, as is shown by the author, a rigid analysis of the cases recorded by different writers, including those which came under his own observation, fail to bear out this view. The two hysterical patients above referred to, coming under our own care, were both of them married men.

The fact must not, however, be for a moment lost sight of, viz., that hysteria is the apanage of women, among whom a thousand cases have been collected for fifty in men. In females generally a fourth of the number are subject to hysteria, and more than half of them are either hysterical or very excitable. What is the reason of this sad preference given to them? "Evidently it can be attributed only to three orders of causes: to the particular constitution of the genital organs of the female; to the special nature of her organization in general; and to that of her nervous system in particular." M. Briquet proceeds to investigate the actual and relative share of these three conditions for the supervention of hysteria. Regarding the first, we have the early dictum of Hippocrates: *Mulier propter uterum condita est;* and that of Van Helmont: *propter solum uterum, mulier est id quod est.* Equally strong is the creed of M. Dubois d'Amiens, that, in fact, the uterus makes the woman, during the mean period of her life. Unfortunately for this opinion, replies our author, a certain number of instances are on record of women in whom the uterus was entirely wanting, but who exhibited, nevertheless, the characteristics of the sex, and fulfilled entirely their connubial obligations as *femmes couvertes.*

The author gives a case coming under his own observation of a woman twenty-four years of age, who died in the hospital from typhoid fever, and in whom, as was ascertained by an autopsy, the uterus was entirely wanting; the Fallopian tubes were represented by two fibrous cords, each terminating at the rudiments of ovaries, which were replaced by a grayish tissue. The vagina was only six to seven centimetres (about two and one-half inches) in length, and terminated in a solid tissue; it formed in fact a true *cul-de-sac.* The pelvis was normal and full, as in women generally; the pubis was furnished with hair resembling that found in the adult woman; the greater and lesser labiæ, as well as the corpora cavernosa and the clitoris, were moderately developed. This young woman had none of the attributes of the other sex; her face and features were mild and delicate, and there was no beard on the upper lip; her voice was feminine. The limbs were round and full, and without muscular prominences; the chest was narrow and the haunches were very full. On inquiry as to her character and habits, it was ascertained that they were those of a woman, and moreover that she had a lover, to whom, from complaisance, as she said, she was in the habit of allowing everything.

That the uterus does not make the woman is further proved by reference to her early or infantile life, when the uterus and the entire genital apparatus are in a rudimentary state, and perform no specific function, and yet even thus early both the physical and moral peculiarities of the sex are evinced, and stand in marked contrast with those of boys of the same age.

He next proceeds to consider the influence of the nervous system in the production of the disease, and remarks truly, what we are fain to admit as an ultimate fact without our being able to explain it by anatomy, that woman has greater sensibility, both physical and moral, than man, whether we look at her tactile sensibility, her delicacy of taste, and susceptibility to any external impression, even to that of strong odors. So sensitively disposed is the sex that it is rare to see a woman who, under any strong emotion, does not suffer in the manner described in a preceding paragraph.

Influence of age on hysteria.—This, as M. Briquet justly remarks, is a question not merely of facts, but it is an important element in the solution of the problem of the nature of this disease.

Looking for facts, we find in 351 cases collected by M. Landouzy (*Traité de l'Hysterie*) from the writers who preceded him, the following proportions: Hysteria showed itself in 48 persons, between the ages of 10 and 15 years; in 105, between 15 and 20; in 80, between 20 and 25; in 40, between 25 and 30; in 38, between 30 and 35; in 15, from 35 to 40; in 7, from 40 to 45; in 8, from 45 to 50; in 4, from 50 to 55; in 4, from 55 to 60; in 1, from 60 to 65; and in 1, from 80 to 85. M. Landouzy omitted to introduce into his tabular statement four cases of hysteria which occurred before ten years of age, probably under an impression that, with the prevalent doctrine of the etiology of the disease, they would not be admitted to be genuine cases. Georget, at the Salpetrière, saw a case of hysteria in a female nine years of age; and M. Beau, in the same establishment, records, in 19 cases of hysteria, 6 which occurred between 10 and fifteen years of age. M. Briquet exhibits a tabular statement of the proportionate number of cases of hysteria during the period of infancy, as he terms it, and between this and puberty, in a grand total of 87 cases. In the first or early infantile period, ending at five years of age, there were 31 cases, of which 14 were accompanied by convulsive attacks, and 17 by states of suffering which must be regarded as special to hysteria. In the second of the two above-mentioned periods, 3 had regular attacks (convulsions, etc.) at 5 years of age; 6, between 6 and 7 years, also with convulsions; 11, between 7 and 8 years; 6, between 8 and 9 years; 9, between 9 and 10 years; 4, between 10 and 11 years; and 17, between 11 and 12 years. It appears, therefore, from this numerical statement, that hysteria manifested itself in eighty-seven cases in a period ranging from infancy to puberty, and, consequently, that one-fifth of all the cases noted by the author were anterior to the age of puberty. The history of some of these is furnished in the volume before us, and we must again express our regret at not being able to introduce them into our pages.

The predisposition to hysteria, so far as it depends on the nervous system, and the functional movements occurring in the latter, is shown, manifestly, to bear a closer relation to age than to any other etiological or modifying circumstance. Rank in life does not alter the relative number of cases of predisposition to the disease depending on age. They were the same in the more elevated classes as reported by M. Landouzy, as those of the poorer class, inmates of the hospital, recorded by M. Briquet. A fifth of the number of hysterical patients, we repeat, had become so before the age of puberty. The period of the maximum number of these persons was between twelve and twenty years of age—a period in which two-fifths of the subjects of hysteria are met with. The predisposition diminishes from 20 to 25 years. It is very slight from 25 to 40 years; and hardly exists at all between 50 and 60 years. It is obvious that the predisposition to hysteria before puberty cannot have any connection with the state of the genital organs; nor can we believe in any influences of this nature being exerted at a later period, as between 19 and 25 years of age, when there is decreased predisposition to the disease, notwithstanding the active state of these organs during this time. If, on the other hand, we look to the susceptibilities growing out of the activity of the encephalic organs, we shall find adequate explanation of the differences in predisposition during these two periods.

The *hereditary* predisposition to hysteria would seem to be proved on good evidence. M. Briquet cites a number of authors to this effect, and adds his own confirmatory statements, based on a large number of cases. In summing up, M. Briquet tells us, that the children of hysterical parents are twelve times more subject to hysteria than are equal numbers of those whose parents have not been afflicted with hysteria. Omitting the statistical returns introduced by the author, we give his conclusion, viz., that half of the number of hysterical mothers give birth to children who in their turn become hysterical.

An inquiry into the "*physical constitution and the moral nature*," as influencing causes of hysteria, leads M. Briquet to infer that the predisposition to the disease is chiefly due to moral influences; and more particularly to those of a painful nature. The inferences laid down by the author are reached after a citation of facts and reasoning for which we have not room on this occasion.

Touching the influence of *climate* in the production of hysteria, we are told that this disease is found in all climates. If warm climates seem to give rise to hysteria, the cause must be sought for in the frequent indulgence and liveliness of the passions, originating in the manners of the people who inhabit them.

The conclusions drawn from observation of the effects of *social position* as relates to hysteria are such as would occur to most inquirers, viz., that although all women, rich and poor, may become hysterical, yet will the frequency be proportionate to the ills endured, and that as the poor suffer most they will count the larger number of victims to the disease.

A contrast has sometimes been attempted to be drawn between females born and brought up in the *city*, and those who were natives of and lived in the *country*, in favor of the latter. The difference is not, however, M. Briquet assures us, so great as is generally supposed. Hysteria occurs at a more advanced age in the country than in a city, but convulsions seize those living in the former less readily than those in the latter. In great centres of population, such as very large cities, hysteria is unquestionably very common, as we may readily believe from a union of all the causes which enfeeble the organism and give an undue predominance to the nervous system.

"*Education*" influences the state of susceptibility to hysteria, the readiness or the occurrence of which will be increased by idleness, frivolous occupations, crowded company, the ball-room and the theatre, reading of novels and exaggerated pictures of life. But the opposite, or harshness and undue restraint and maltreatment in early life, will produce equal evils, by deteriorating the health and predisposing to, and at times directly causing hysteria.

The alimentary regimen, in as far as it is operative in disposing to hysteria, does so, as M. Briquet infers from his own observations, more from deficient than from superabundant or too nutritious food. The entire force of this conclusion ought to be somewhat abated by the poverty of the class of patients—inmates of a hospital—with whom he has had to deal.

The various *passions and emotions*, it will be readily conceded, exert no little power over the nervous system in the production of hysteria. M. Briquet draws his conclusions on this point from observations on 430 cases. The concluding paragraph of this "article" shows the phrenological bias of the author. He adopts the philosophical divisions of mind without making use of the nomenclature of this school. It is worthy of remark, that while phrenology as a system engages public attention less now than it did some years back, its chief tenet, the plurality of the organs of the brain and corresponding plurality of the faculties of the mind, finds place frequently in investigations of a metaphysical and ethical character, and also on the subjects of education, criticism, and taste, as well as in pathology. We had occasion, in a previous number of this journal, to point out the free adoption of some of the doctrines of phrenology, in our review of Drs. Tuke and Bucknill's valuable treatise on insanity. But to the passage in the volume before us:—

> "These various moral agents, by their continued action, influence disagreeably the portion of the encephalon appropriated to the affective impressions; they quicken the sensibility to such a degree that the least cause of painful sensation acting on this portion of the encephalon provokes immediately from it a reaction—that is to say, a manifestation of the uneasiness experienced—and this manifestation is hysterical."

Respecting the share which *particular callings* have on the production of hysteria, it may be readily understood that those of a sedentary kind, which keep the body in a state of prolonged rest, those which require constant stay in workshops, and those in fine, which yield insufficient salary or wages, are so many predisposing causes of the disease; while, on the contrary, those callings which demand muscular movement and which are exercised in the open air, and allow of those who work at them obtaining suitable nourishment, are so many means of warding off hysteria. This disease is represented by eminent physicians of Lausanne to be quite common in the Bernese Oberland, and some other elevated districts in Switzerland; and they attribute the cause of this frequency to the reading of romances, to the forced rest and sedentary life to which the inhabitants are subjected during six months of the year by the imbedded snow which prevents them from leaving their houses. Dr. Magnus Huss, of Stockholm, writes to M. Briquet, that the occurrence of hysteria is becoming much more frequent in Sweden among women in the country since they have ceased to work in the fields with their husbands. We can readily believe that the women of America would prefer running their chances of being hysterical to procuring exemption from the disease after the Swedish practice.

Addiction to letters and the fine arts is sometimes cited among the causes of hysteria; but, as the author thinks, without sufficient reason. Classing under the head of *professions* the members of religious orders who take the vow of celibacy, he shows that but a small number of these persons suffer from hysteria, and even of them only a few on account of giving themselves up to a life of continued prayer, seclusion, and austerities, which produce a morbid susceptibility of the nervous system. Hysteria is seldom seen among the sisters of charity who live in the open air, take much exercise, and are actively occupied.

Servants.—M. Briquet directs attention to women of this class in connection with the present subject, not because they are more liable to hysteria by the mere living out at service, but because their state will serve as a transition from the celibacy of convent life to the opposite habits of another class, of which notice will soon be taken. Most of these women come from the country to Paris, and suffer in consequence from nostalgia, the wearisomeness of servitude, or unusual labor, the anxieties incident to a precarious subsistence, and those growing out of their illicit unions, which lead many of them to the venereal hospital. The frequency of hysteria in this class is derivable from the causes just stated; and cannot be attributed either to unsatisfied desires or to their immoderate gratification.

Prostitutes.—Similiar inquiries made into the relative frequency of hysteria in prostitutes resulted in the conclusion that more than one-half of this class of females are subject to the disease; and that the proportion is more considerable in those who keep to their own rooms than the others who congregate in bawdy houses, and tramp the streets at all hours of the day and night. These latter have, in general, a strong constitution, and are careless of the future.

The causes of hysteria in this wretched class are to be found, M. Briquet very correctly thinks, in the destitution, vigils, abuse of alcoholic drinks, continual fears of the enforcement of police regulations, bad treatment on the part of the men with whom they live or consort, forced seclusion occasioned by the diseases which they contract, and unrestrained jealousy and other violent passions by which they are agitated. The frequency of hysterical attacks would probably be greater, were it not for the strength of constitution and the moral obtuseness of these women, created by their habits. Little stress can be laid on excessive excitement of the sexual organs in them, as they cease to feel venereal orgasm after the frequent performance of coition.

The next, or "Article XII.," is taken up with an inquiry into the "*influence of continence*," in giving rise to hysteria. "From the most remote times, both philosophy and medicine have regarded continence as the principal, and, indeed, the sole cause of hysteria." Plato, in whose works we find the first notice of this doctrine, says "that the womb of women is an animal which will by all means conceive, and which enters into a rage if it does not conceive;" but he gives no proof of this assertion..

In a subsequent part of the volume the author shows that diseases of the uterus and its appendages to which prostitutes are liable, have very little effect in the production of hysteria.

In recapitulating the somewhat extended arguments and details on the alleged etiological importance of continence, M. Briquet says :—

"1. That widows are not more liable to hysteria than other women.

"2. That, contrary to the assertions of authors, hysteria is of rare occurrence in women after the thirtieth year of their life, and very common before this age.

"3. That hysteria shows itself in a fifth of its cases before the age of puberty, and that then it can have no relation to the question of continence.

"4. That this disease is less frequent in married women than in single ones, only in the proportion of 7 to 9.

"5. That it is not more common in persons who live in a state of celibacy than in others in an opposite state; but, on the contrary, it may be of very frequent occurrence in those who are not at all continent.

"6. That gratification of the sensual wants gives no protection against hysteria.

"7. That it is not true that hysteric attacks terminate frequently by the evacuation of a fluid from the genital organs.

"8. That it is not true that so soon as the genital organs have reached their entire development their functions should be brought into activity, under the penalty of hysteria by the omission to do so.

"9. That it is possible, under certain circumstances of a limited range, that the genital organs, being either naturally or artificially excited and not being adequately gratified, may be a cause of strained exercise of the brain, from which cause there may arise a predisposition to hysteria; but that up to the present time this predisposition can only be received as the result of induction rather than the direct result of observation."

On the question of the influence of *menstruation* in giving rise to hysteria, M. Briquet makes the following summary, deduced from divers facts and figures in the preceding part of the article.

"1. Menstruation, whether normal or pathological, can be considered as a predisposing cause only in three-eighths of the cases of hysteria.

"2. In five-eighths of the subjects of the disease, menstruation exerted no influence in the production of hysteria, for in 87 of them the disease had appeared before the age of puberty; in 156 there was no difficulty in menstruation; and in 6 hysteria had appeared before the menopausis, (critical period.) Hysteria cannot, therefore, be regarded as the result of menstrual derangements.

"3. The effects of menstruation are felt more strongly in the period between twelve and twenty years of age than at any other time.

"4. The menstrual troubles predispose much more to the slow and gradual approaches of hysteria than to that variety in which the disease is suddenly introduced by an attack, in the proportion of 4 to 1.

"5. This kind of predisposition is only referable to the influence of the uterus and its annexed organs in a small number of cases of disordered menstruation; the greater number depending on general changes in the economy and the sufferings of other organs."

The author opens the question involved in the next article, viz., the *influence of divers morbid states* in the etiology of hysteria, by the remark that they are more influential in this way than is generally supposed. Beginning with disorders of the reproductive organs, he writes: "All that can be said up to the present time is, that of the thousands of hysterical women whose cases have been noticed by physicians, in not more than a hundred have lesions of the ovaries been met with." Nor does he believe that the predisposition to hysteria developed by uterine affections is better demonstrated than are the lesions of the ovaries in the same sense. He returns to this subject in greater detail in the next chapter, on the determining or exciting cause of hysteria. At the same time he admits that an excitable condition, in which the brain is liable to be powerfully impressed by prolonged irritations of the genital organs, may give rise, in its turn, to nervous reactions; and that the general weakness thus induced increases still further the susceptibility to morbid impressions.

Chlorosis shows the extent to which defective hematosis will increase nervous susceptibility, in the fact that, of 430 cases of hysteria, 152 had been very decidedly chlorotic before the appearance of the disease. *Typhoid fevers* must be acknowledged to give rise occasionally to hysteria. *Diseases of great gravity*, such as small-pox of an intense grade, pneumonia and acute rheumatism, which required an active antiphlogistic treatment, and prolonged attacks of which had called for numerous evacuations, and old intermittent fevers, caused hysteria in twenty cases of the list of 430 in M. Briquet's possession: they were developed during the period of convalescence. Some of these diseases acted as predisposing causes; others as predisposing and exciting at the same time.

There are other morbid states which seem to exert an effect the very opposite of a predisposing cause: these are organic diseases of the heart, phthisis, organic affections of the liver, and also of the kidneys, which are very rarely followed by hysterical symptoms. Even in severe diseases of the genital organs themselves, as in puerperal metritis, phlegmonous ovaritis, also in extensive pelvic abscesses—and we may add, in the great pains of coxalgia, ulcerations of the articular cartilages, and white swellings, there is still greater exemption from hysteria. This disease is sometimes caused by minor operations, such as exploration with the speculum, cauterization of a chancre, Faradisation of the skin; but never by great surgical operations.

As relates to the *state of health before the invasion of hysteria*, this, contrary to what we might suppose *a priori*, does not exert a decided influence in bringing on hysteria, or when manifested, it is in a different sense from what would have been anticipated, as we learn from the following summing up:—

"1. There is a greater readiness to be taken with a sudden attack of hysteria by subjects whose constitutions are sound than by those whose health has been previously affected.

"2. On the contrary, that hysteria which is slowly developed is more likely to appear in persons whose constitution has been weakened."

We may, says M. Briquet, sum up this long chapter on predisposition by the following conclusions:—

"1. The increased susceptibility of the affective element of the nervous system constitutes the foundation of the predisposition to hysteria.

"2. Hysteria is almost peculiar to the female sex, because there exists in it a predominance of the affective element.

"3. Nevertheless hysteria may exist in man, but on the condition that he shall manifest a similar predominance.

"4. The cause of this specialty is not to be found in the genital apparatus of a female, but in the mode of sensibility peculiar to women.

"5. Hysteria is manifestly hereditary; one-fourth of the women who are born of hysterical mothers are affected in their turn with hysteria.

"6. There exists from infancy a special state of susceptibility which is peculiar to the persons who are afterward destined to be hysterical.

"7. Hysteria may show itself in early life, before the age of puberty; the epoch of its maximum frequency is from the age of twelve to twenty-five years; beyond this latter the attacks of hysteria are of rare occurrence.

"8. We find in the development of nervous acts, more than in that of the genital organs, the causes of the tendency to hysteria.

"9. There is nothing in the temperament or physical character of the constitution which predisposes to hysteria.

"10. Hysteria is more common in the lower classes of society, in which it attacks a fourth of the women, than in the higher classes, among which it attacks an eighth of their number.

"11. Hysteria is almost as common in the country as in the city.

"12. A severe education is more apt to lead to hysteria than an indulgent one.

"13. A regimen in which the supply of aliment is insufficient more readily tends to the production of hysteria than a too nutritious diet.

"14. The passions and moral affections of a sad nature are the only ones which predispose to hysteria.

"15. The professions (and callings) only have an influence in predisposing to hysteria, in so far as they may weaken the constitution, by giving a predominance to the nervous system, and increasing the occasions for painful impressions on this system.

"16. Diseases of the genital organs do not predispose much more to the supervention of hysteria than the diseases of other organs.

"17. Continence predisposes to hysteria in a very small number of cases, in which, from peculiar circumstances, the genital organs are excited, or in which the portion of the brain that corresponds with the correlation of the actions of these organs is similarly affected.

"18. There is nothing in its predisposition which justifies the opinions of the ancients on the physical causes of hysteria."

Determining or exciting causes of hysteria.—M. Briquet, in the chapter devoted to the subject, enumerates those causes which have been supposed by different writers to be efficient in the bringing on an attack of hysteria, and comments on the fallacies of opinion exhibited in this catalogue. He then specifies the causes which he believes to be those that really deserve the name of exciting ones. The deductions are made from 594 hysterical subjects. Omitting the first-mentioned enumeration of authors and his notices of certain cases, we extract his closing summary, viz.:—

"1. In five-sixths of hysterical cases, the disease has followed the action of an exciting cause.

"2. In a seventh of the cases, it was developed under the sole influence of predisposition.

"3. In the proportion of a fiftieth, it was produced without any appreciable cause.

"4. More than half the causes acted directly on the brain. Three-fifths of these operated by debilitating the organism and producing a predominance of the nervous system. The sixth displayed its primary action on the stomach. The eighth had, at first, acted on the uterus and its appendages; finally, causes the proportion of which it is difficult to appreciate, act on the external tegument, but all eventually acted on the brain.

"5. The importance attached to the influence of the genital organs has been excessively exaggerated.

"6. The causes producing hysteria, when ushered in by an 'attack,' are commonly instantaneous and powerful.

"7. Those which gradually produce hysteria are, on the contrary, slow, of little intensity, and of such a nature as to alter the constitution.

"8. The causes of hysteria, studied in reference to age, show the little influence exerted by the genital organs and the great power of the different parts of the brain."

Contrary to what might be supposed *a priori*, the difference between the causes of hysteria in the poor and in the rich is not great.

The *second part*, constituting more than a third of the volume, is devoted to the "symptomatology" of hysteria. It opens with chapter third, and its first article is on the "prodromes" of the disease. M. Briquet relates, at the outset, the history of a case, in which is exhibited a development of the various disturbances that go to make up hysteria, during a period extending from infancy to twenty-five years of age. Contrasted with this is the history of another case, in which hysteria manifested itself at a late period in consequence of occasional causes.

The premonitory symptoms of hysteria are displayed in three different modes.

"1. It begins at a very early age, either through hereditary transmission, or through a special constitution, or, finally, under the operation of long-continued and painful sensations. This mode of beginning hysteria prevails in a sixth of the entire number of cases. The children in whom the disease thus shows itself are very excitable, morose, and irritable, and disturbed by the slightest contradictions; they become pale or flushed, complain of a sense of suffocation, sob, are seized with a choking, palpitation, agitation, and trembling of the limbs; sometimes syncope supervenes. They are sufferers before long from headache, disturbed sleep, and painful dreams; they awake in a fright or are attacked with nightmare, and sometimes with somnambulism. The epigastrium is the seat of pain, the appetite is variable and capricious, and the digestion painful; sometimes there is vomiting; finally, pains are felt in the back and between the shoulders, and on the left side of the chest.

"2. At other times, and in rather less than half the number of cases, hysteria is developed at a more advanced age, and in a gradual manner, under the following circumstances. Sometimes the subjects are young girls, of medium strength, in whom hysteria is produced by fatigue and bad food, or ennui; the menses are then irregular, and are finally suppressed. At other times we meet with married women who are loaded with cares, or tormented either by bickerings or by other vexations of housekeeping. In both cases the patients become pallid and thin, their susceptibility is extreme, their temper is soured; they are put out by the slightest cause; under the least emotion there supervene tears and sighs, a sense of choking, oppression at the epigastrium, agitation of the limbs; then cephalalgia, palpitations, hurried breathing, and all the phenomena of chlorosis: the constitution is changed, the nervous system assumes the preponderance, and the digestive functions are deranged. Gastralgia with its whole train of anomalous sensations appears; pains in the back and on the left side of the chest show themselves; restlessness and formication are felt in the limbs."

To these prodromes may be added, in not a few cases, great fickleness of disposition, odd ideas, painful thoughts, tears and laughing without motive, sleeplessness or disturbed dreams; sometimes wandering chills, sometimes a burning heat, and again, frequently, an icy coldness of the hands.

3. In fine, in a certain number of cases which may be estimated as a third of the whole, there is no precursory phenomenon of an appreciable nature; and the female appears to be in a state of full health, when, on the occasion of a great fright or a strong moral emotion, there supervenes, either at the moment of the occurrence of the cause or some hours afterward, an attack of hysteria with convulsions and entire loss of consciousness.

Who can fail to see, says M. Briquet, in these prodromic disorders, which constitute what some writers have called hystericism, an evident cerebral disturbance, with all the signs of congestion of the brain; then an influence radiating from this nervous centre to the different divisions, splanchnic, muscular or sensorial, of the nervous system (reflex action)? It would be hard to find any primitive action of the genital organs under these circumstances.

Under the head of *symptoms* proper, the list is tolerably long. Some of these, as remarked by the author, are of unfailing occurrence, such as extreme excitability, pains in the epigastrium, on the left side of the chest and along the sulcus on the left side of the vertebræ. Other symptoms are less constant, but are generally met with, and constitute the foundation of the disease; such as various hyperæsthesia, convulsive attacks, paralysis, etc. There are others again which are of occasional occurrence, and are only produced under the influence of particular conditions in which hysterical subjects find themselves. To this class belong delirium, lethargy, catalepsy, ecstasis, somnambulism, etc. These various phenomena may, M. Briquet thinks, be divided into eight classes, viz.: 1. Hyperæsthesia. 2. Anæsthesia. 3. Perversions of sensibility. 4. Spasms. 5. Attacks of spasm, convulsions, catalepsy, somnambulism, ecstasis, coma, lethargy, and syncope. 6. Paralysis. 7. Perversions of contractility. 8. Modifications of exhalation and secretion.

Hysterical hyperæsthesia is distinguished from other varieties of morbid sensibility by its being seated in certain organs preferably to others: it is more changeable in its seat than the other kinds of hyperæsthesia, and is especially influenced by moral affections. It may appear in all the organs to which the nerves of relation are distributed; and in a particular manner the skin, the muscles, the articulations, the nerves, the organs of the senses, the larynx, the bronchiæ, the intestines, the kidneys, the bladder, and the uterus. Hysterical *dermatalgia* or hyperæsthesia of the skin, although it must always have occurred, was only noticed for the first time in a formal manner by MM. Moneret and Fleury, in 1842. Cases have occurred in which there was such exquisite sensibility of the left mamma as to induce surgeons, who were considered skillful, to recommend excision of the organ. Dermatalgia is seldom met with except in acute cases of hysteria.

Myosalgia or muscular pain is of such common occurrence in hysteria, that there is not, the author assures us, a single case of an hysterical female who has not suffered from it in the course of the disease. Most of the troubles in hysteria are connected with, or end in irregular actions of the muscles, as we see in convulsions, paralysis, anæsthesia, and most of the muscular pains. Exponents and ready servitors, as the muscles are, of the various emotions and passions, it is easy for us to understand why they should be called into violent and irregular action in hysterical attacks, in which the sufferer is so often a prey to these states of mental disorder. The muscular pain is simply a perversion of sensibility, and is in no way associated with inflammation.

Following out the varieties of hysterical myosalgia, M. Briquet speaks in succession of *cephalalgia, epigastralgia, rachialgia, pleuralgia, costialgia, thoracalgia, myelosalgia, arthralgia, neuralgia, hyperæsthesia of the organs of the senses, laryngo-bronchial hyperæsthesia, hysteric cough, pseudocroupal suffocations, asthma, gastralgia, enteralgia, nephralgia, cystalgia, hysteralgia.* Many an instructive lesson is given in the observations and deductions made by the author under these several heads. That which ought most strongly to impress the mind of the practitioner is the extreme importance of a correct diagnosis in affections of the different organs, so that they may not be supposed to be the seat of inflammation, when, in reality, their muscular tissue is suffering under a morbid excitement of the nerves of the part, or from neuralgia and myosalgia.

In the headache of hysterical subjects, the pain is chiefly confined to the fleshy portions of the muscles of the cranium. The *clavus hystericus*, a rare variety of cephalalgia, has most commonly its seat in the temporal regions and in the sinciput; it is confined to one spot, which is very circumscribed: the pain is intense, and may last for several days. *Epigastralgia,* like cephalalgia, attacks the largest number of hysterical subjects, and ushers in the paroxysm. Sometimes it results from direct irritation transmitted from the nervous centres; sometimes from reflex action, beginning at the digestive canal, which was the seat of disorder. It interferes with the movements of the respiratory muscles, and when the diaphragm is prevented from its free play, the distress is great. The least ligature, even the pressure of ordinary clothing, cannot be borne. *Rachialgia,* by which the author means, hyperæsthesia of the muscles of the back, viz., the trapezius, the dorsalis major, and the mass consisting of the sacro-lumbalis, and longissimus dorsi, is also one of nearly constant occurrence in hysteria. It affects the upper half of the spinal region in preference to the lower; and the left rather than the right side, and in point of frequency comes after cephalalgia and epigastralgia.

M. Briquet quotes Sir Benjamin Brodie, on the egregious blunder in diagnosis, by which rachialgia is confounded with a disease of the spinal marrow, and a young female is condemned, in consequence, for many years, to a recumbent posture, and to be tormented with setons, moxas, and cauterization, when in fact fresh air, exercise, and suitable amusements would have effected a cure in a few months. The French author corroborates this view, and tells us that the mistake is quite a common one.

Pleuralgia commonly extends over a portion of one side of the chest, sometimes in an oblique direction, corresponding with that of the ribs, sometimes directly horizontal, as a belt, equal to four or five fingers' breadth, on a level with the fifth, sixth, seventh, and eighth ribs and the intervening intercostal spaces, giving a preference to the left side. Pleuralgia, intermediate as its seat is between rachialgia behind and epigastralgia in front, has been confounded with intercostal neuralgia, of which the first-mentioned, hyperæsthesia, was represented to be the vertebral end, and the second the abdominal; all three being supposed to depend on a lesion of the intercostal nerve.

Cœlialgia, or hyperæsthesia of the muscles, anterior and posterior, which compose the walls of the abdomen, offers some interesting points of diagnosis; as when pain on either side of the hypogastric region, evinced on pressure, is supposed to indicate a phlogosis of the ovaries. The error is rectified by making the slightest pressure, or even slightly rubbing the surface, so that the muscles alone are compressed, and not the subjacent parts. So, also, pressure in the hypogastric region, when productive of great pain, is assumed to evince uterine inflammation, when in fact it is often only a proof of hyperæsthesia of the lower part of the recti and the pyramidal muscles. Thoracalgia, or hyperæsthesia of the anterior muscles of the thorax, is not common in hysteria. *Myclosalgia*, or pain of the muscles of the limbs, has been noticed by M. Briquet in sixty-four cases of hysteria. Sometimes it is combined with dermatalgia, and often with anæsthesia of the corresponding portion of the skin.

Arthralgia, as a hysteric affection, was first clearly noticed by Frederick Hoffman; but the merit of successful generalization, and of fixing on it the attention of the profession, belongs to Brodie. Commonly the pained joint exhibits neither redness, nor any appreciable heat of the skin, nor swelling, nor any sign of hydrarthosis in the synovia of the diseased joint. Neuralgia, contrary to the opinion of most writers, is, we are told by M. Briquet, a rare affection in hysteria, and of which, when it does occur, it must be considered a complication, rather than an essential part.

Hyperæsthesia of the organs of the senses gives, at times, in hysteria, an astonishing acuteness to the functions of these parts. To this circumstance we must refer the alleged marvels, told some years ago, of young girls who could read with their eyes closed, and who in fact had hyperæsthesia of the optic nerve, which allowed of their reading with almost a meeting of the eyelids.

Hysteric cough has been so well described by Sydenham as to leave little room for improvement by his successors. We should like to note some of the points laid down by M. Briquet on this occasion, but have not room for the purpose. Looking to the frequent fits of coughing, twelve to fifteen in a minute, for hours entire, it is not easy to divest one's self of anxiety for the result, which experience shows, however, to be favorable. *Pseudo-croupal suffocation*, an alarming feature, and of sudden occurrence in hysteria, may be promptly and completely relieved by tracheotomy, and it is in such cases, much more than in ordinary croup, that there ought to be no hesitation in having recourse to the operation. Asthma is now and then met with as a hysteric complication.

Gastralgia and enteralgia constitute *hyperæsthesia of the digestive passages.* Gastric disorder is the most frequent prelude to hysteria in those cases in which the disease comes on gradually. Capricious appetites and aversions to certain articles of food are common in hysteria. In some, vomiting is the predominant symptom, associated with gastralgia; but both affections yield to remedies and time. The case is different when the pain is acute and violent and the stomach rejects all food. Prompt and efficient measures are then called for. Moral affections readily induce hysteric gastralgia. Sometimes it disappears suddenly. *Nephralgia* and *cystalgia* should be thought of in probable connection with hysteria. Hysteralgia, though a painful disease, seldom attacks hysterical subjects.

Anæsthesia, the opposite state to that which we have just been considering, is described by our author, as regards the first notices of its detection and its now recognized features and peculiarities, with more fullness than we can give an idea of in our very curt analysis. Our waning space compels us to increased compression, even although it be of rich and varied material. In times gone by, the fact of persons having certain parts of the body insensible to ordinary impressions and to painful irritations subjected them to the imputation of sorcery and dealings with the devil, and brought on them the punishment of death. Anæsthesia is so common in hysterical subjects, that some writers believe in its being always present in one part or another of the organism of such persons. It frequently supervenes on attacks of hysteria. Its seat is always in the organs or tissues supplied by the cerebro-spinal nerves, and never in those of organic life: its duration varies from days to years. The skin is the most common seat of anæsthesia, and next to it the mucous membranes at the openings of the different cavities which they line. Anæsthesia in the eye may, in the last degree, give rise to amaurosis; in the ear it seldom goes to deafness. Muscular anæsthesia has given rise to some strange scenes, as in the stripes, blows, and self-imposed tortures to which fanatical subjects, in a state of hysteria, were subjected, without their evincing any sensibility, or even an approach to pain.

A short chapter is devoted to the subject of "*perversions of sensibility*," in which many curious cases are related. Among these was that of Weber, the celebrated musical composer, who fell into syncope from the odor of Cologne water. A more noticeable fact, as serving to explain some of the mummeries of spirit-rapping, is the sharp noise similar to that made by the joints of the fingers when they are suddenly and strongly stretched. This noise is heard at the time of the disappearance of hysterical convulsions or cramps. M. Briquet relates an instance of this cracking sound, which could be produced at will by a woman moving her scapula, while raising her shoulder, and which was owing to the contact of the anterior face of the scapula with the posterior parietes of the thorax.

"*Spasms*" are the subject of chapter sixth of the volume before us. They have been defined to be, convulsions of the muscles of nutritive life and of the elastic tissues; that is to say, of the contractile apparatus which are not under the direct control of the will, and which receive their nerves, in great part, from the trisplanchnic, and in small proportion from the cerebro-spinal system. These spasms may affect the organs of digestion, respiration, and circulation, and also those of the genito-urinary apparatus.

Spasms of the pharynx and œsophagus give rise to the sensations of choking and strangulation, which are such common symptoms of hysteria. The spasm of the throat, or hysterical suffocation, may have its seat in the pharynx and œsophagus, or in the larynx and upper portion of the trachea. For the most part it only comes on during an attack of hysteria, or from strong mental emotion. The pharyngo-œsophageal constriction sometimes lasts but a few minutes, and ceases with the attack of hysteria; but it may continue for several days, the patient during this time being unable to eat or drink. In one case, the patient, in a period of seven months, was unable to swallow anything except a little broth. Vomiting is one of the effects of a spasmodic condition of the muscular coat of the stomach. It may continue for months; for, like hiccough, it is a very persistent symptom. In some there is so complete a peristaltic action that even enemata have been thrown up by vomiting. Borborygmi are common enough in hysterical subjects; at times the gas in the intestines is confined between two points of contraction of the muscular coat, and there result pains and globular tumors, which may occupy successively, and in a short period, all the different parts of the abdomen.

Suffocation, barking, mewing, etc.—When the spasm attacks the air-passages, the muscles of the larynx are thrown into a convulsive state, and there succeeds a series of diverse phenomena. When it is confined to the constrictor muscles of the glottis, which receive branches from the pneumo-gastric and the two upper cervical ganglions, the breathing is impeded, and the inspiration labored and hissing. When it extends to all the muscles of the larynx, the voice is suddenly lost, or it is greatly changed, becomes acute, and constitutes a kind of cry. When the spasm seizes, at one and the same time, the muscles of the larynx and those of the chest, of the abdominal parietes, and of the diaphragm, there ensue those varieties of sounds which have excited the astonishment of observers. These cries, says Willis, imitate the barking and howling and yelping of dogs, the mewing of cats, the bellowing of cattle, the chucking of fowls, the grunting of hogs, and the croaking of frogs.

These cries are of variable duration, and recur at variable intervals. Sometimes they are intermittent, as in the instance of the nuns of a convent, who were quiet during the day, but when six o'clock came, began mewing, and continued it the whole evening. In some cases, the patients, instead of uttering cries, give way to vociferations in the same tone, or repeat continually the same word or a very short phrase. One case related by the author was cured by moral means, which consisted mainly in taking the patient abroad in the most public streets of Paris, and acting on her sense of shame at exposing herself to the public gaze and the comments of those she met, if she yielded to the utterance of strange cries or other noises. There are not wanting cases of hysterical seizure in which the patient, a female, highly educated, refined, and delicate in her deportment and language when in her ordinary state of health, would indulge in coarse and vulgar speech, and even obscene epithets.

M. Briquet refers to the histories of epidemic barking, given by different authors. In boarding schools and in nunneries this disorder has been known to spread rapidly from a single case, in virtue of imitation by those around, whose susceptibilities readily predisposed them to nervous disorder. *Hiccough*, a common occurrence in hysteria, may persist all day, but invariably disappears during sleep.

Spasms of the organs of circulation, as evinced in palpitations, with a very frequent pulse, sometimes one hundred and thirty to one hundred and eighty in a minute, may come and go suddenly, or may last during months and even years; the skin all the time preserving its natural temperature. Spasms of the constrictor muscle of the vagina have been noticed in some instances, and in others of the neck of the bladder, accompanied with retention of urine.

Chapter seventh is devoted to a consideration of *hysteric attacks or paroxysms*, which, from their marked character and sudden cessation and recurrence at intervals, were supposed by some writers, as Houillier and Riverius, to be remittent. It is more correct to believe in the continued character of hysteria itself, and its occasional aggravation by the occurrence of paroxysms. These may present themselves under different forms, which are reducible to the following, viz., 1, spasms; 2, syncopes; 3, hysterical convulsions; 4, epileptic convulsions; 5, catalepsy; 6, ecstasis; 7, somnambulism; 8, coma and lethargy; 9, delirium. Under these several heads the author introduces a large amount of description of curious morbid phenomena, historical incidents, and details of cases connected with the occurrence of hysteria. The article on hysterical convulsions is particularly full, were it only in the accounts of different epidemics of the disease during the sixteenth and seventeenth and in the early part of the eighteenth century. The period of life in which these convulsive attacks are of most frequent occurrence is between fifteen and thirty years of age. A singular case of a young girl, twelve years of age, is related, which we wish much that we had room to introduce here, but cannot. One of her extraordinary feats in the hysteric paroxysm was, to be able to dance, not only on a table, but on a stick placed transversely, also on the back of a chair, and on the shoulders and on the head of another person, without losing her balance. She heard nothing, and was insensible to pain and punctures, made with a view of causing pain. The tendency to imitation is very strong among females disposed to hysteria, and hence the succession of attacks in one person after another, where the first sufferer is seen by her companions or friends. Many of our readers may remember the manner in which the celebrated Boerhaave arrested this imitative tendency among young persons of both sexes to fall into epileptic convulsions, in the hospital at Haarlem. He assembled all the inmates of the hospital, and directed iron rods to be heated in their presence, after which he declared in a loud voice that, since all other means had been found of no avail, he knew of but one remedy to be employed, which was to burn with a red-hot iron a particular part of the arm, down to the bone, of the first person who might be taken with convulsions. The scene, the loud voice and impressive manner of Boerhaave, impressed so strongly the children of the hospital with a fear of the operation as to enable them to resist the approaches of the next paroxysm.

In speaking of the diagnosis of hysterical convulsions, M. Briquet indicates the characteristic symptoms of hysteria and of epilepsy in parallel columns. The distinction between the former of these two diseases and eclampsia, and lead colic, and convulsions, is also pointed out. A section or "article" is given to a notice of epileptic attacks which may be combined with hysteric ones. The union was called by Sennert *epilepsia uterina*, a name indicative of the dominant etiological creed of the time, and which M. Briquet has taken so much pains to nullify.

We must pass over, without special notice, what we find in the sections on attacks of catalepsy, ecstasis, somnambulism, sleep, coma, lethargy, and delirium, also of convulsions and rigidity of the muscles, in the interval between the attacks of hysteria. Paralysis in different degrees is quite common in hysteria; it is only seen in the muscles supplied by the cerebro-spinal nerves; the hemiplegic is the most common variety, and this on the left side. The "article" on this theme is full and instructive, and is further enriched with details of cases.

The *third part* of the volume opens with chapter thirteenth, on "the march [or progress] of hysteria," which, unlike that of so many other diseases, does not go through a series of successive periods. The author treats of it under the divisions of acute hysteria, hysteric fever, slow hysteria, and hysteria with intermissions. To these succeed causes of intermissions, and sudden cures. The next chapter treats of the "complications" of hysteria, and the following one of its "terminations." After this we meet with the chapters on "the pathological anatomy of hysteria," its "diagnosis" and "prognosis," and "the seat and nature of hysteria." Morbid anatomy has failed to reveal anything positive respecting the seat or the nature of hysteria, for all the lesions that have been noticed in the *post-mortem* examinations of hysterical subjects are the results of complications of disease in other organs, in addition to those of the nervous system, which is the real seat of hysteria. Rarely do females die from this disease—divested of the complications just mentioned. We the less regret our not being able to repeat what the author has said on the subject of diagnosis, as nearly all of it has been anticipated in the description of symptoms, to which we refer our readers. The hysteric tripod, according to the author, consists of the three hyperæsthesiæ, viz., 1, epigastralgia; 2, a pain on a level with the middle portion of the left false ribs, or pleuralgia; 3, rachialgia. If to these we add the frequent presence of anæsthesia, chronic convulsions, and paralysis on the left side of the body, we shall have little difficulty in making out a correct diagnosis of hysteria. The prognosis of hysteria, by many writers, is quite favorable; but when we reflect on the morbid sensibility which it leaves behind, the great exhaustion following its repeated attacks, and the extreme difficulty of curing it, as the conditions for doing so are not under medical control, we cannot regard it otherwise than as a very formidable disease.

In discussing the questions of the seat and nature of hysteria, which M. Briquet does at some length, he repeats some of the arguments and views which he had advanced when he spoke of the predisposing causes of the disease. After passing in review the different pathological creeds on these points, be reaches the conclusion, that hysteria is a passionate manifestation of the suffering or irritation of that portion of the encephalo-spinal mass destined to receive the affective impressions and sensations. That view which would place the seat of hysteria in the spinal marrow is entirely too restricted, and excludes an admission of the agency of moral causes, which are so powerful, and which for their manifestations require the medium of the brain.

Treatment.—The *fourth* and concluding *part* of M. Briquet's work is on the treatment of hysteria. It is divided into three chapters, viz., on prophylaxis, the treatment of hysteria proper, and the special treatment of each of the symptoms. The prophylactic treatment ought to begin with a hygienic course, to be pursued during the pregnancy of the mother, under the supposition that the coming child may be a female. The indications, in this case, will be to diminish as much as possible the excessive excitability of the nervous system, to augment the activity of the muscles, and to furnish to the blood the elements which shall place it in a normal condition. With this view, the future mother will retire to the country, take regular and moderate exercise, make for herself pleasant occupations, and avoid indulgence in strong emotions and passionate excitement. An hysterical woman ought not, M. Briquet thinks, to nurse her child: his belief is, that she will not furnish it with all the elements or with those of a good quality for proper hematosis, and it is not certain that her milk may not contain elements which will augment the nervous susceptibility of the child.

In confiding the little being to a nurse, care must be taken that this person is in good health, is of a sanguine constitution, and calm in her disposition, and not excitable. Aware of the hereditary character of hysteria in one-fourth of the cases of the disease, we should advise that the education of the child must begin at its birth. Accordingly, says our author, the indispensable conditions for the education of the first period of infancy are, a good milk diet, residence in the country, habitual exposure to the outer air, and reserve in the expressions of tenderness on the part of the mother and of the relatives in habitual intercourse with the child. So soon as the latter can walk, it ought to be clad in easy-fitting garments, and of a texture as light as is compatible with the state of the weather. In fine, all the rules of sound hygiene, both in its physical and moral relations, should be carried out, with a preference to what in the language of the day is called "roughing it." The time should be divided between intellectual and bodily exercise, an arrangement very different from, but far preferable to, that faulty system now in vogue, in which scarcely an hour in the day is left open for exercise and recreation.

At the epoch of puberty, and when the young female is about entering into the world, to act her part in it, increased vigilance should be exercised to enlist all the means—hygienic, moral, and intellectual—which may give vigor to her frame and stability to her mind, especially by her avoiding whatever may increase excitability or favor false and exaggerated sentiment. Crowded assemblies, balls, and the theatre should be avoided. The reading of novels, by giving erroneous and fanciful views of human nature and actions, and indisposing to a discharge of the practical duties of life, ought also to come within the prohibited list. Tissot has said: "if your daughter reads romances when she is fifteen years of age, she will have the vapours at twenty." In their intercourse with young women predisposed to hysteria, the parents ought to appeal to reason more than to sentiment, and show them that their extreme sensibility subjects them to ridicule and places them in the power of those around them. The present practice of treating children with extreme care and tenderness and nurturing their sensibilities, is, M. Briquet thinks, less favorable to a healthy státe of the feelings, than the more precise, formal, and exacting manner of parents of a former generation.

Among the means preventive of hysteria, and also those of cure when it has appeared, marriage has been recommended on the high authority of a long succession of writers. The question is examined by M. Briquet under various aspects, and with evidence of considerable literary research, which we are the less obliged to repeat here, after what was said on this subject in treating of the predisposing causes of hysteria. Physical as well as physiological considerations must enter into a solution of the question. A girl, neglected, lonely, and discontented under the parental roof, may find in the husband of her choice a new life opened to her—greater variety in occupation and in the exercise of her affections; and in this way through a genial excitement of her nervous system nutrition becomes active, she recovers her complexion, and gains rotundity of figure. But in all this we must find more varied and multiplied causes than in the simple excitement of the genital organs and gratified sensual desires. Let the scene in married life be changed; let crosses, contentions, bad conduct of the husband and anxieties about the children disturb the mind and derange the harmony of the nervous system, and then will ensue hysteria and its associate disorders, although the sexual desires continue to be gratified and the condition of the entire reproductive apparatus have been changed. Of 421 hysterical subjects, whose cases were studied by M. Briquet, 152 were married, or had kept house and borne children, and of the others, eighty-seven were of infantile age, or under twelve years.

More reliance is to be placed, as remedial means, on an entire change in the external life of the patient, by change of scene, travel, prolonged voyages, visits to watering places, meeting new faces, and making new acquaintances. A change of constitution may also be effected by the use of analeptics, nourishing food, in which milk enters largely, chocolate of a proper manufacture, as of cacao and sugar, or with feculant articles, as in broma. The use of red, especially Bourdeaux wines, is much insisted on by the author, or if not procurable, beer in its place. Chalybeates mixed with wine, at meals, are also well spoken of; and M. Briquet advises, at other times, hydrogenate of iron, the pills of Blaud, Vallet, the lactate of iron of Gelis and Conte, and the ferruginous syrup, to be continued with some persistence. Of the vegetable tonics, a preference is given to the gray bark in powder, in doses of a few grains, also the cold infusion or the vinous syrup. Mineral waters take high rank among the prophylactic remedies, as they do also for the cure of the disease, when it has come on. The same may be said of the cool bath, from sixty-five to seventy-five degrees of Fahrenheit, followed by frictions with flannel dipped in some aromatic spirit.

There are, on the other hand, females of a sanguine temperament and a full habit who are predisposed to the disease and become hysterical. They require the use of diluents and demulcents; restriction to white meats, whey, etc., and prolonged immersion in a cool bath of the temperature just indicated.

The *general treatment* of hysteria is carried out by the use of the following classes of therapeutical agents, viz.: stimulants; antiphlogistics; hydrotherapeias; antispasmodics; narcotics, and revulsives. The first class, or stimulants, M. Briquet believes to be seldom called for or beneficial in hysteria. Tonics, on the other hand, are of marked utility, as might be inferred from the debility and anæmia which are so common in the subjects of this disease. Among the antiphlogistics, blood-letting is seldom serviceable, except in a few cases of plethoric habits, in which its use should be clearly indicated. We must pity such patients as the young hysterical woman, at Turin, who was bled 700 times in fourteen years; and a woman of Alexandria, who was bled 1400 times in eight years, and, the most extraordinary part of the story, who was eventually cured. Leeches to the anus or vulva have been found serviceable, however, in the hemorrhagic diathesis, and in suppression or absence of the menses, and in habitual discharges of blood. Tepid, or rather cool baths as above, so highly extolled by Pomme, should be used every second or third day, and in some cases even every day; prolonging the duration of each bath to five or six hours. Tepid or cold enemata often give great relief. Under the head of "hydrotherapeia," M. Briquet renews the expression of his confidence in the remedial efficacy of cold, and cites his success in typhoid fever by cold bathing, ice to the head, iced drinks and iced enemata. In acute hysteria, as in hysteric fever, delirium, sleeplessness, extreme restlessness, convulsions, erethism, and excessive general excitement of the organism, he extols this treatment. Contributing to the same end are hip baths and pediluvia in water of the temperature of 56° Fahrenheit. The hydropathic treatment, intermittent or continued, by a packing in wet sheets, is well spoken of: the first or intermittent, is to be had recourse to every third or fourth day: it will consist of a single packing and reaction. The other consists in the repeated application of ice to the head in cephalalgia and delirium, and to the abdomen and pelvis in hyperæsthesia of these parts.

Antispasmodics rank low, in the therapeutical scale of the author. Very different is the value he attaches to *narcotics*, as represented more particularly by opium and its salts, the use of which in considerable and repeated doses is tolerated to a great extent by hysterical subjects; and hence the doses may be increased until it produces the desired tranquilizing effect. The auxiliaries to opium specified by the author are, distilled water of the lettuce, the syrup of lactucarium of Aubergier, in teaspoonful doses several times a day, the distilled waters of the cherry-laurel and of the black cherry, infusions of peach flowers, the cherry-laurel, bitter almonds, bruised, which make so many varieties of pleasant drinks, and the habitual use of which ought to be recommended to hysterical subjects. This treatment, which M. Briquet assures us is the best borne by this class of patients, should be continued perseveringly for a period of two months, and will be rewarded by successful results. It is the standing treatment, but it need not interfere with the use of chalybeates or of remedies applied to the relief of particular symptoms. Magnetism, (animal,) which the author calls fascination, is a tranquilizing agent, and may be used with good effect in some cases: its operation is, he alleges, entirely due to its acting on the imagination and the senses, and not by any material agency. It ought to be regarded as an anæsthetic, and to be only occasionally employed to abate some unexpected disturbance. So, also, of chloroform; its effects are transitory and exert no permanently beneficial influence on the disease.

Revulsive medication is one of the most useful means of treating hysteria. The revulsives most in use act primarily on the skin. Electricity may be regarded as the most efficient of the entire class; the preferable method of using it is by giving rise to currents by induction, constituting what is now termed Faradisation. The best apparatus for the purpose is that of M. Duchenne. The benefits from Faradisation, as a means of counter-irritation or of revulsion, are to produce at will a pain and irritation in all possible varying degrees of intensity, and to be able to prolong this pain and excitation during some minutes consecutively, while leaving the skin perfectly sound, and with ability to apply it to every part of the body.

The last chapter of this volume is on "*the special treatment of each of the symptoms of hysteria.*" Compelled to draw our analysis to a close, we can barely notice some few of the leading points in the detailed directions for the administration of therapeutical agents. These are to be used in order to meet the indications furnished by the prominent forms of disorder which present themselves in hysteria. The difference between this and the preceding chapter consists not so much in any novelty of means in the latter as in their specific applications to existing exigencies. For the relief of dermatalgia, the chief treatment will consist of revulsion in the manner already mentioned. Hyperæsthesia of the muscles is met by antiphlogistics, antispasmodics, anodynes, revulsives. "The sole anodynes, the use of which is followed by real and constant effects, are applications of cold water and ice." "But the truly heroic medication of hyperæsthesia of the muscles consists in the employment of revulsives," in which Faradisation plays an important part. Hysterical rachialgia is relieved by similar means. The neuralgia of hysteria requires the same remedies as ordinary neuralgia. Hysteric cough is but little relieved by medicine: its cure is to be looked for in a general treatment consisting of tonics and hygienic agents which will give tone to the economy. Nearly the same remarks apply to the treatment of gastralgia, with, at the same time, a removal, if possible, of the causes of the disease, and especially those of a moral kind, and the substitution of pleasurable emotions, to be procured in part by travel and varied occupation and amusement. So also of enteralgia. Hysteralgia, for which so many remedies have been given with indifferent success, has been promptly relieved by an incision on the neck of the uterus in the direction of the axis of this organ, as recommended by M. Malgaigne. M. Briquet prefers currents by induction, made to pass through the most painful part of the neck of the uterus. For the removal of anæsthesia of the skin, "the most certain, the most simple, and the most expeditious, is Faradisation of the affected part." With it we may conjoin, if necessary, the revulsives named in a preceding page. The prime remedy, Faradisation, is, the author assures us, the remedy for nearly all the other varieties of anæsthesia, as it is met with in the organs of the senses and in those of nutrition. Spasm, as dysphagia, constriction of the throat, and of respiration, barking, etc., are benefited by this measure, evidently a very favorite one with the author. He recommends, also, in the last-mentioned disorder, regular exercise of the organs of voice and speech, as in declamation and singing, while beating time. The most reliable remedies for vomiting are icy-cold gaseous drinks, swallowing pounded ice, sinapisms and blisters, and finally a bladder filled with ice applied to the epigastric region. Seldom will vomiting resist these means if aided by opiate enemata. In the most obstinate cases, all drinks are to be withheld, and only some spoonfuls of pounded ice are to be taken, and the skin of the epigastric region is to be Faradised.

For combating the paroxysms or "attacks" of hysteria, M. Briquet advises different means, with, however, a special preference for electricity in the manner so repeatedly mentioned. In paralysis following hysteria, this remedy has done wonders, performed almost miracles. Cold baths, cold affusions, and cold douches, directed on the affected limbs, are also highly praised.

ART. II.—*On Diseases Peculiar to Women, including Displacements of the Uterus.* By HUGH L. HODGE, M.D., Professor of Obstetrics and Diseases of Women and Children in the University of Pennsylvania. "*Nullius addictus jurare in Verba Magistri.*" With Original Illustrations. 8vo., pp. 442. Philadelphia: Blanchard & Lea, 1860.

UNDER the above rather indefinite title, Dr. Hodge presents us with an exposition of his particular views and practice in respect to a class of diseases, or, perhaps, more strictly speaking, of morbid phenomena incident to the female sex, which have their rise in a state of abnormal irritation—a morbidly excitable condition—of the proper tissue of the nerves of animal life, while those of organic life are so slightly or indirectly involved as to demand but little or no attention whether in a pathological or therapeutical point of view. The most frequent origin of the strictly neurotic ailments alluded to being, according to the experience of the author, a state of morbid irritability of the uterus and its appendages, occurring more especially during the menstrual life of the female.

The pathological views and practical directions embraced in the present treatise are presented by Dr. Hodge as the result of clinical observations collected by him during a long and extensive practice, thirty years of which have been spent in the public teaching of obstetrics and the diseases of women and children.

The morbid phenomena described by Dr. Hodge are unquestionably of very frequent occurrence in the female sex, especially in those individuals who possess naturally an eminently nervous temperament, or in whom that temperament has been developed by a life of luxurious or vicious indulgence. The phenomena referred to form a class of diseases that have attracted much of the attention of the medical profession, in consequence of their obscure and often mimetic character, the strange complication of their symptoms, the peculiar sense of suffering, if not of actual pain, by which they are attended, their resistance to all the ordinary plans of treatment, and their liability speedily to recur after they have been apparently subdued. From this circumstance, as well as from the long experience of its author, his known habits of careful observation and deliberate judgment, and his entire reliability as an accurate and truthful recorder of the facts that have fallen under his notice, the work of Dr. Hodge comes to us clothed with no trifling degree of interest and authority. It is strictly an exposition of the author's own views and practice, and not a summary of the contributions of others upon the subjects discussed, or a critical review of their opinions and plans of treatment.

While, however, we yield all the deference which is justly due to the attainments, character, experience and skill of Dr. Hodge, in the particular department of medicine to which he has devoted chiefly his attention, we are unable to indorse all that he advances in respect at least to the etiology of the particular morbid conditions of which he treats, and to their prophylactic and remedial management. We admit every fact he has adduced, respect his experience, and feel no disposition to doubt the accuracy of his observations. Still, as all are perfectly aware, facts are susceptible of different interpretations; experience the most ample is often fallacious, and the apparently well matured judgment liable to be diverted from just deductions by a habit of regarding things in a single point of view, or through the disturbing influence of a preconceived theory. The work before us is nevertheless, as a whole, one of great ability, and cannot fail to secure for itself a favorable reception from the profession. It is replete with original views, and worthy of a close and candid examination on the part of every practitioner.

After a careful examination of the subject, it will be scarcely possible to doubt the occurrence of a class of diseases dependent solely upon nervous irritation, actual physical maladies resulting from an irritation of the medullary matter of the brain, spinal cord, and their radiations—the nerves; the disturbance of functions thence resulting being confined in many cases to those strictly of animal life. Of these maladies Dr. Hodge is almost the only faithful delineator and historian, while many of the leading practical directions for their prevention and treatment set forth by him will be found, we feel persuaded, when strictly carried into practice, well adapted to the relief of the sufferings by which they are almost invariably attended, and which, in most cases, will prove rebellious to the ordinary plans of practice based upon erroneous views of their nature and their causes.

The treatise is divided into three parts: the *first* treats of diseases of irritation or of exalted and deranged irritability or susceptibility; the *second*, of displacements of the uterus, which Dr. Hodge sets down as the most frequent cause of the diseases treated of in the first part; while the *third* part treats of diseases of sedation, organic and nervous, but more especially of sedation of the uterus, and of its result, amenorrhœa. The fact is, the leading subject of the work throughout is the pathology and therapeutics of the neurotic conditions of the womb and its appendages.

The initial chapter of the first part of the treatise is devoted to a general consideration of the subject of nervous irritation and its consequences; subjects upon which the author entertains views somewhat different from those taught in the books.

The terms *irritability* and *irritation* Dr. Hodge would, if possible, restrict to morbid conditions of the tissues and organs, while the terms *excitability* and *excitement* he would have applied to them only when in their healthy state, as indicative of their susceptibility to the normal excitants and their reaction under their influence.

After pointing out the difference in the amount of excitability—the susceptibility to impressions—possessed by the different tissues and organs of the human frame, at the different periods of life, by the two sexes, and by different individuals of either sex, Dr. Hodge lays down the distinction between *organic* and *nervous irritation*, or in other words, between irritation of the organic and animal life of the organism, between inflammatory and strictly neurotic diseases. He next considers the true character of the pathological condition of the blood-vessels, denominated *congestion*, with the view more especially of drawing the proper distinction between simple nervous congestion, which is often a physiological, healthy occurrence, and inflammatory congestion, which is always a pathological condition.

An increase of the normal secretions of the congested organs is noticed as one of the more constant results of simple, temporary congestion. When, however, the congestion is long continued, or transcends the strictly physiological grade, not only may excessive effusion occur in the closed cavities, producing mischief that is often irremediable, and from, also, the free secretory surfaces, causing great inconvenience and debility, but even effusions of blood within the substance of the organs, giving rise thus to apoplexy of the brain, of the lungs, etc., or from the mucous surfaces, producing hemorrhagic discharges from the lungs, stomach, bowels, uterus, etc.

Congestion sometimes, according to Dr. Hodge, becomes a stimulus to the organic actions of the part in which it is seated, so that the nutritive functions are more actively developed, causing the organ to increase in size, to become *hypertrophied*, but without any change in its tissues, save that of augmented bulk. Inflammation, he believes, never to be the result of simple nervous congestion.

Neuralgia, according to our author, is simply the result of an irritation of the proper tissue of a nerve of sensation, while *spasm*, *cramps*, and *tonic* and *clonic convulsions* are the phenomena caused by an irritation of the proper tissue of a motor nerve. But it is not merely by decided pain, spasms, and convulsions that simple nervous irritation is manifested, it may give rise, instead of these, to an innumerable and indescribable variety of morbid sensations and states of feeling, that may be, perhaps, generally speaking, of comparatively trifling import, but which are often of a character the most distressing and terrible, ranging in fact in different cases from a simple *malaise* to a condition of distress and agony that renders life itself scarcely endurable.

Dr. Hodge lays down the general proposition that in the human organism the excitability of any organ is always inversely as its strength. The stronger, more robust, more healthful the individual, the less is his nervous excitability, the less nervous his temperament, the more powerful are the impressions it requires to disturb his mental and physical susceptibilities. Let, however, the strong man be weakened in any way, whether by deprivation of food or sleep, over-exertion, or want of exercise, disease, etc., he will become nervous, his mind will become excitable, and his body keenly susceptible to every impression. As he again regains his strength his irritability diminishes, and he becomes less sensitive, less impressible.

Dr. Hodge defines the hysterical, or neurotic diseases of women, as states of irritation of the cerebro-spinal nervous system in whole or in part. Very evanescent when the cause which produces them is transitory, as in nervous affections from moral impressions, but very persistent in all cases where the cause remains operative; hence the indomitable character of certain nervous or neuralgic affections, from the persistence of their cause, either because it has been entirely overlooked, or, if discovered, found not to be removable.

The task undertaken by Dr. Hodge in the treatise under review is to illustrate the general views, of which we have endeavored, thus, to give a brief outline, by a very full account of the nervous disturbances excited or kept up by the uterus and its appendages when in a state of morbid irritation, and hence to deduce the proper pathology and therapeutics of irritable diseases in women.

The subject thus chosen as the exponent of the neurotic diseases of the female sex, namely, irritable uterus, its symptoms, reflex influences, progress, results, and treatment, with a consideration of the pathology of irritable diseases generally, occupies the eleven remaining chapters of the first part of the treatise.

The history given of the local and general phenomena indicative of irritable uterus is particularly full. Whatever opinion may be entertained as to the true cause of these phenomena, the faithfulness of the author's description of them cannot be called in question.

The local symptoms of irritable uterus, as described in the first part of chapter three, are pain and various distressing sensations, aggravated by motion and by every cause, physical, moral, or mental, which imparts a shock to the womb, or directly or indirectly stimulates it or its appendages. The local morbid phenomena in cases of irritable uterus are usually aggravated by menstruation, sometimes to an intense degree. This constitutes "the *simple dysmenorrhœa*" of Dr. Hodge. Which he defines to be, essentially, a neuralgic and spasmodic affection of the womb, dependent upon the morbidly sensitive—simply neurotic—condition of the tissues involved.

When very intense or long continued, the irritable condition of the uterus may give rise to nervous congestion, as a consecutive or secondary affection. When this happens, besides a sense of fullness, swelling, weight, and bearing down, there will be detected, by a digital examination, a swollen condition of the cervix uteri, as at the beginning of pregnancy, with a divergent state of the lips of the os, showing a tumefaction of the reflected membrane of the vagina, as it becomes uterine, the os uteri being actually or apparently more patulous than is normally the case. This swelling is always greatest during the catamenia, after a long walk, after coition, or, indeed, after any physical or moral excitement. A similar swollen condition may often be perceived at the orifice of the urethra, in its caruncle, in the arborescent and vaginal surface under the urethra, and throughout the vulvo-uterine canal. By the speculum, the mucous membrane of the vulva, vagina, cervix, and os uteri, especially the latter, will be found of a red or scarlet, sometimes of a purplish color. The fluctuating character of this congestion is shown by the varying condition of the parts as to intumescence and coloration, at different examinations repeated at short intervals.

As an occasional consequence of long-continued nervous congestion of the uterus, Dr. Hodge enumerates simple hypertrophy, without inflammation or any change of tissue other than that of increased bulk.

Another very common result of the congestion incident to irritable uterus, according to our author, is *menorrhagia* or *hemorrhagia uteri.* This, by recurring at short intervals, by its profuseness, or by its long continuance, often renders the patient feeble, anæmic, dyspeptic, and even dropsical; while the cerebro-spinal system becomes so sensitive, so irritable, that both mind and body are reduced to a state of exhaustion. The entire organism acquires a morbid sensibility, and a horrible train of physical, mental, and moral disturbances set in, which render existence scarcely tolerable.

Leucorrhœa is also, according to Dr. Hodge, a frequent result of simple congestion in cases of irritable uterus, as a mere profluvia from the lining membrane of the uterus, altogether independent of inflammation. That such a form of leucorrhœa does occur we are not inclined to deny, and yet we think the rationale of it given by Dr. Hodge is, to say the least, of very doubtful accuracy. He supposes that an irritation is present similar to what exists at the menstrual nisus, and that this is followed by congestion and increased secretion. The leucorrhœa in these cases he views, therefore, as an imperfect menstruation—the fluid discharged not being fully elaborated—it is in fact, strictly speaking, the "white menses" of old authors.

Besides the simple, neuralgic form of dysmenorrhœa already referred to as a symptom of irritable uterus, Dr. Hodge admits three other forms of painful menstruation: 1st. The *congestive.* The normal vascular excitement of the uterus is aggravated; the fullness of the blood-vessels, at the catamenial period, becomes preternatural—inordinate. The nervous symptoms are augmented and often become very intense, and apparently threatening; severe sympathetic disturbances of the brain, spinal marrow, stomach, and bowels often follow. These, however, are usually of short duration, lasting sometimes for only two or three hours. 2d. *Mechanical dysmenorrhœa.* This is frequently due to obstruction of the canal of the cervix uteri, from the presence of coagula, inspissated mucus, lymph, or a membrane in the cavity of the neck or body of the womb; from turgescence or thickening of the lining membrane of the organ; the formation of strictures; or, finally, from the presence of a flexion of the cervix uteri, which our author believes to be the most frequent cause of obstruction. In some very rare cases, there is congenital contraction or deformity of the cervix. All these obstructions give rise to spasmodic efforts of the uterus for their removal. 3d. *Membranous dysmenorrhœa.* In this form of painful menstruation, there is either the formation of a deciduous membrane within the uterus, caused by the exfoliation of the proper mucous membrane of the womb, or by a desquamation of epithelial scales produced in such abundance as to present a membranous appearance—the membraniform formation in either case being discharged during menstruation, generally in large shreds, sometimes, however, in the form of a cast of the uterine cavity. It is evident that in no case are these membraniform substances the product of an inflammatory process. They differ from lymph in all their characteristics. Dr. Hodge ascribes their production to a high degree of nervous irritation, giving rise to congestion, followed by a kind of hypertrophy of the lining membrane of the uterus, with exfoliation.

The complications of irritable uterus—endometritis, metritis, tumors, etc., are the subjects embraced in the fourth chapter. A contrast is presented between the inflammatory conditions of the mucous tissue of the uterus and vagina and those of the substance and peritoneal surface of the womb, showing that the symptoms of the former are less intense and the disease far more tractable. Even in those chronic inflammations of the cervix involving the whole substance of the neck, with the granular appearance of its extremity, and the everted, tense, tumid lips of the os, few symptoms, Dr. Hodge remarks, exist to advertise the patient of her condition, and very often no general disturbances are excited. The patient often feels well. The reputed intractability of these inflammations, he believes, often arises from their complication with displacements, which keep up the irritation.

The *general* symptoms of irritable uterus are considered by Dr. Hodge: 1st. As cerebro-spinal irritations; giving rise to hyperæsthesia of the surface; irritations along particular nerves; convulsions, delirium, and various intellectual and moral disturbances. 2d. Reflex influences of cerebral and spinal irritation, upon the respiratory organs, the heart, the mammæ, the viscera of the abdomen, etc., giving rise, in different cases, to various disturbances of each of these portions of the body often simulating the most alarming of the organic diseases to which they are subject.

The *progress* and *results* of irritable uterus are next considered, under the heads of irritable rectum, irritable vulva and vagina, irritable bladder and urethra, morbid states of the ovaries, irritable lymphatic glands, and irritation of the pelvic nerves.

Of the author's teachings in reference to the several subjects embraced in the chapters we have thus briefly run over, we should be pleased to present a very full analysis, could we with propriety occupy the necessary space. To the work itself we must refer the reader; who will find, in the graphic description given of the various affections esteemed by Dr. Hodge as of a purely nervous origin—that is, dependent upon an irritation confined strictly to the proper nervous tissue—much to instruct—much that is calculated to lead to a correct diagnosis, treatment, and prognosis. He may not be inclined to view with the author the nervous diseases incident to the female as pure examples of hysteria, using the term in the same sense as that given to it by the older writers—that is, as dependent upon a direct action from the irritable condition of the uterine organ upon the cerebro-spinal system or particular portions of it, or a reflected action through the latter upon the different tissues and organs of the body; still, he cannot fail to derive from the descriptions and rationale of morbid phenomena contained in the chapters before us important suggestions as well pathological as therapeutical in respect to some of the most common and painful affections of the female.

As *predisposing causes* of irritable, that is to say, the purely neurotic diseases of women, Dr. Hodge enumerates the nervous temperament, rheumatism and gout, the parturient state, displacements of the uterus, a warm climate, and the sedentary, indolent habits engendered by it. As *exciting causes*, he sets down inflammatory congestion, parturition, overlactation, nimia venus, mental and moral excitements, cold, great muscular efforts, pressure upon the uterus, external or internal; uterine diseases, such as hypertrophy, induration, tumors within or on the exterior of the organ, or imbedded in its substance, physometra, hydrometra, abscess, obstructions (partial or complete) of the cervix uteri, etc., and irritations of other organs.

Dr. Hodge believes that there are many reasons which explain the greater prevalence of nervous affections of the uterus and their more distressing character now than formerly. One of these is the greater development of the nervous temperament in the female, from the increased indulgences and luxuries of modern female life, in which every stimulus is supplied adapted to procure a precocious development of the mind, the heart, and the passions, with an entire neglect of physical education, all which is adapted to unduly and too rapidly excite the animal at the expense of the organic life. Another reason is the improper style of clothing of modern times, with its tight lacing, its weight, its braces, etc. Dr. Hodge believes that upon inquiry, it will be found that the increased frequency of uterine diseases is, however, more apparent than real; these complaints passing formerly under a variety of names, leading the mind away from their actual nature and seat. Even at present, he thinks that the uterus, as a source of spinal and cerebral irritation, of neuralgia, spasms, and convulsions, is too often ignored.

It will be impossible for us to present any more than a very brief notice of the interesting and able account given by Dr. Hodge, of the treatment of irritable uterus. The first indication he lays down is, of course, the removal of the cause, whatever that may be, and whenever it is under the control of the physician. In fact, the treatment demanded for the removal of the cause is, in most cases, pretty much all that is required for the recovery of the patient.

The second indication to be fulfilled is to diminish or destroy the morbid irritability, whether general or local. This is to be attempted by two classes of remedies. The first includes all those agents which have a direct sedative or anodyne influence on the nervous system, particularly the antispasmodic and narcotic medicines, so useful as temporary means for assuaging pain and moderating uncomfortable nervous sensations. These are valuable as palliative measures, but seldom useful as permanent remedies. The second class of remedies, the indirect, are those which give strength, and impart vital vigor, and in this manner render the whole constitution less excitable, less irritable. These are a proper course of hygienic measures—a proper regulation of diet, of clothing, and of exercise and rest; exposure to a fresh and pure air; the external use of water, either generally or locally, and of such a temperature as the condition of the patient's constitution shall warrant; injections of cold water into the vagina or rectum.

In facilitating the reinstatement of the strength and vigor of the constitution, Dr. Hodge believes that much may be done by a judicious employment also of general and local medicinal agents. In acute cases circumstances may demand, for the relief of excessive congestion, at particular periods, and in women of full habits, the loss of blood, especially by cups or leeches to the sacral, hypogastric or iliac regions, the inside of the thighs, or to the pudendum. Revulsives, as hot baths, hot hip baths, warm poultices and fomentations, large, warm mucilaginous or watery vaginal injections, sitting over the vapor of hot water or herbs, he describes as particularly soothing and palliative. To relieve acute attacks of pain and spasm, narcotics are prescribed, either internally or locally, in poultices, or by friction, or by injection into the vagina or rectum. In chronic cases the loss of blood is of very doubtful propriety. The local application of warm water as above, though always palliative and grateful, should not, however, be persisted in for too long a period. The local application of cold water is perhaps the remedy from which the best effects are to be anticipated in the reduction and removal of excessive debility. It is recommended to be employed in the form of douches to the back, loins, and sacrum, or of sponging to the abdomen, thighs, and pudendum, followed by frictions of the surface. Tepid, cool, or cold vaginal injections, according to the sensations and experience of the patient, Dr. Hodge considers to be advantageous in the intervals of the catamenia. Cold rectal enemata he also esteems beneficial, when, especially, there is constipation.

Dr. Hodge thinks highly of the direct application of narcotics to the uterus, in the form of injections or suppositories. As occasional remedies, anodyne rectal enemata are pronounced by him to be very efficient.

Of the extremely popular remedy, the application of nitrate of silver to the cervix and os uteri, whatever advantages it may possess in cases of decided inflammation of these parts, Dr. Hodge believes that in pure cases of irritable uterus, while it may at first diminish morbid sensitiveness, it seldom affords permanent relief. In respect to the proposition to introduce bougies into the neck and body of the uterus with the view of blunting in this manner the morbid sensitiveness of the organ, he speaks in no very encouraging terms.

In the treatment of the *painful menstruation* consequent upon irritable uterus, while during the intervals we are to direct our attention to the correction of the local cause, whatever this may be, but especially to the replacement of the uterus in its proper position, and to the removal of obstructions of the cervix, by pessaries, sponge tents, bougies, etc., and by the enforcement of the whole treatment indicated for irritable uterus, during the paroxysm our chief object should be the palliation of the patient's suffering. Her bowels are to be opened by castor-oil or an enema, a hot pediluvium, hip or general bath is to be administered, and patient put to bed, with poultices or fomentations to her hypogastrium, hot applications to her feet, warm mucilaginous vaginal injections being given, followed by hot drinks and diaphoretics. When the pain is severe, narcotics may be administered. In the use of these latter, the utmost caution is to be observed. They are always to be viewed as temporary remedies only; their habitual use is always to be deprecated.

In cases of *menorrhagia*, while the general health of the patient is reinstated and sustained by a suitable hygienic and remedial treatment, Dr. Hodge insists that the main object should be the removal of the local irritation and congestion. Inflammation, if present, will demand mild local applications; displacements of the uterus require the use of an appropriate pessary. When the discharge is severe or persistent, a tonic and even stimulant treatment may in some cases be demanded, with astringents and ergot internally, and cold applications to the hypogastrium, rectum, and vagina, and astringent washes to the vagina and cervix uteri; and in obstinate cases, injections of tepid water or weak solutions of alum or sulphate of zinc, or some other astringent, may be thrown into the cavity of the uterus.

In cases of *leucorrhœa* the same practice, according to our author, is proper as in cases of chronic menorrhagia. Remove, he remarks, the irritable condition of the uterus, and you will cure the leucorrhœa. When displacements are present, as is generally the case, pessaries are the most efficient remedies: by relieving the irritation, they of course remove also the congestion and the discharge. As palliative measures, all the usual general and local treatment for anæmic and exhausted cases of irritable uterus will be found important in the management of leucorrhœa.

Some very important hints in respect to the character, effects, and treatment of enlarged and indurated uterus, uterine and ovarian tumors, will be found in the same chapter in which the therapeutics of the maladies above noticed is discussed.

In the treatment of the complications of irritable uterus, its secondary and sympathetic affections, Dr. Hodge lays down two leading indications: First, to detect and remove the cause, which, with him, constitutes very properly the radical treatment of all spinal and cerebral irritations; and, second, to diminish the morbid irritability of the cerebro-spinal system, by imparting tone to the whole body. These two indications cover the entire field of therapeutics applicable to the mere nervous affections—the *simulative* complaints—of the brain, larynx, lungs, heart, stomach, bowels, ovaries, uterus, etc. The prognosis in all cases of purely irritable diseases, he insists, is almost always favorable; nevertheless, it is admitted that in some few protracted cases, when improperly managed, or absolutely neglected, secondary complaints of a dangerous character may ensue.

Dr. Hodge assumes as an established fact, that the true proximate cause of the nervous diseases of women is in the greater number of instances an irritable uterus—it being usually, in such cases, "*ipse morbus*," the disease itself. Now, this irritable condition of the uterus he supposes most frequently to result from displacement of the organ; or when the latter does not actually produce it, it causes by its presence a persistence of the irritable condition, even after its original cause has been completely removed. With such views, it is evident that malpositions of the uterus and their treatment are with him subjects invested with no trifling degree of importance, their investigation being essential, in order to complete the analysis of the pathology and therapeutics of the state of morbid irritability of the organ, and of the neurotic diseases generally of the female constitution. Part *second* of the treatise before us is, therefore, devoted expressly to the consideration of uterine displacements, their varieties, causes, symptoms, and treatment.

Dr. Hodge describes first the natural position of the uterus, and the nature of its supports. The position of the uterus in the pelvis, and the admirable provisions for its sustentation, are such that, in the healthy robust female, though engaged in active labor, and on her feet for many hours every day, its displacement is of very rare occurrence, or it may even occur to a certain extent without any bad effects resulting.

The varieties of uterine displacements are next very accurately described, and their predisposing and exciting causes investigated. Among the predisposing causes, Dr. Hodge enumerates relaxation of the uterine ligaments and fascia; increased size and weight of the uterus; distention of the abdomen; pressure upon the abdomen; leucorrhœa, etc.; and among the exciting causes, sudden or prolonged muscular effort; the development of tumors on the anterior or posterior portions of the uterus, and various other developments which cause by their presence pressure upon the posterior or anterior surface of the womb.

We cannot attempt to furnish an analysis of the symptoms indicative of uterine displacements. Dr. Hodge admits that in females whose nervous system is strong, but at the same time not readily excited, the uterus may become displaced with apparent impunity. They may feel well, and all their functions may be easily and comfortably executed. In general, however, displacements of the uterus give rise to more or less inconvenience, which is augmented in intensity when from any cause or concurrence of causes the uterus has become morbidly sensible. The general deduction, which Dr. Hodge believes to have been confirmed by his own long-continued experience, is that malpositions of the uterus are intimately connected with all the phenomena of irritable uterus, either as original or as aggravating causes. That until such malpositions are rectified, neither the morbid condition of the organ itself nor of the cerebro-spinal system can be removed. So long as the displacement is permitted to remain, dysmenorrhœa, menorrhagia, and leucorrhœa, the pelvic sufferings, the inability to walk or stand, the spinal and cerebral irritations, with all the occasional but terrible disturbances of the larynx, lungs, heart, stomach, liver, kidneys, and bowels—especially the rectum—can hardly be completely relieved, and sometimes not even palliated; while, on the other hand, if the displacement be removed, recovery will generally quickly ensue.

Dr. Hodge admits that many cases of cerebro-spinal irritation, or *hysteria*, as the disease is usually named, may occur without uterine displacement, or even in which there is no uterine irritation of any kind whatever. In addition to these cases, he has met with others in which the displacement had been completely relieved, while the local and general symptoms of irritation, although palliated, were still present. This persistence of the phenomena of irritation is very often owing to our ignorance of their local origin; they may result from other causes than a displaced uterus, and from an irritation seated in some other of the tissues in the sacral region.

In the treatment of the various uterine displacements there are, according to our author, four indications to be fulfilled. 1. To remove or palliate any existing causes. 2. To replace the organ. 3. To maintain it steadily in its natural position. 4. To strengthen its natural supports.

For the fulfillment of the third indication, no reliance is placed upon any other measures than the introduction of pessaries of suitable material, size, and form. These are considered essential for their perfect relief. By them it is maintained that the uterus may very generally be replaced and held in situ.

> "That the local symptoms of weight, pain, etc., the leucorrhœa, the menorrhagia, the dysmenorrhœa, and all the innumerable direct and indirect symptoms of spinal and cerebral irritation, including neuralgia, nervous headache, nervous affections of the larynx, lungs, heart, stomach, bowels, etc., as also spasms, cramps, and convulsions, may often be dissipated; that the intellectual and spiritual being may be elevated from the lowest state of depression, bordering on melancholy, or be delivered from the highest degree of maniacal excitement, and that the whole economy may thus be revolutionized. Patients often are amazed at their own altered sensations; they can hardly realize their identity—feeling as if they were either renovated, or that they had been transported to a 'new world.'"

After this eulogium upon pessaries—and no higher we believe has any one of their advocates ever ventured to pronounce—a deep interest will necessarily be felt to know the particular material and forms of pessaries which Dr. Hodge has found from experience to be best adapted to the several varieties of uterine displacement met with in practice. For the necessary information on this point we must refer our readers to the work before us. The lever pessary is the one preferred by him; though he admits that it acts more slowly in the restoration of the replaced organ than the intra-uterine pessary, yet, eventually, it is equally certain. At the same time,—

> "It does not necessarily produce any irritation, organic or nervous, or any leucorrhœa, menorrhœa, inflammation, etc. It can be worn at all times, night and day; it interferes with no motion, and no function; the patient has no attention to pay to it, except a daily vaginal wash; she may, and often does forget its presence; can enjoy her connubial pleasures, can move about in society without anxiety, is free from local and general nervous irritations, from corporeal, intellectual, and spiritual disturbance; and the physician may hope that the uterus being perfectly sustained, the ligaments, now free from every

counteracting influence, will continue to contract to their normal length, and acquire their original tonicity, so that a permanent cure may be effected, or that pregnancy ensuing, the continued use of the pessary will preserve his patient from those irritations so frequently excited by displacements, and so apt to result in abortions."

When, in support of the foregoing statements, we have adduced the experience of a practitioner of the age and standing and cool inquiring mind of Dr. Hodge, we are scarcely warranted in doubting their accuracy. It is true, we have the admission, that it is not in every case of uterine displacement we are to expect from the use of pessaries complete success; partial relief is sometimes all that can be obtained. The difficulties Dr. Hodge believes to arise from the improper character of the instruments employed, the mechanical obstructions to a replacement of the organ, the great sensibility of the vital tissues involved, the timidity and nervousness of the patient, and too frequently from the want of proper indications in carrying out the treatment.

For ourselves we are not at all surprised at the acknowledgment of the small amount of relief often obtained from the use of pessaries in cases of irritable uterus; our wonder is that with the morbid conditions so well described by our author, they should ever succeed; that they do not, in fact, in every instance in which they are resorted to aggravate the sufferings of the patient. We confess we cannot understand how it is possible, when the uterus, the vagina, the bladder, and the rectum are all in a state of the most intense morbid sensibility, the introduction of a metallic lever, adapted to force as it were, and sustain the dislocated and contorted and exquisitely irritable womb in its normal position, can afford the great and prompt relief ascribed to it. That such relief does result from its use is proved, it is said, by the large and carefully analyzed experience of Dr. Hodge. While we admit the very great weight of the evidence thus adduced, may we not be permitted, without offending, to suggest that experience may sometimes be fallacious? We firmly believe that far too much importance has been ascribed to slight displacements of the uterus. It is our opinion that the irritable state of this organ is not always nor very generally due to local causes acting directly upon the organ itself, but is the result of the general morbid irritability of the system at large. Let this latter be removed by an appropriate hygienic and medical course of treatment, and the irritability of the uterus will be cured in despite rather than by the aid of pessaries.

In relation to tumors of the uterus which occasionally complicate displacements of the organ, Dr. Hodge is particularly decided in his opposition to the vaginal operation for their enucleation, as altogether useless in cases even of apparent or reputed success. He believes, besides, that they must be often injurious not merely from the pain and irritation they produce, the inflammation and abscesses which may be their consequences, but from the danger, also, of their facilitating the development of any tumor which may remain, and any malignant predisposition to which it may be liable. Nearly the same objections (with the additional one of the danger of peritoneal inflammation) hold good, in his opinion, against the attempt to remove these tumors by an abdominal section. Equally opposed is our author to the operation of ovariotomy. His chapter on enlargements and displacements of the ovaries demands a careful perusal on the part of every practitioner; it is rich in facts and replete with instruction.

Part *third* of the treatise is devoted to a brief consideration of the diseases of sedation, or those dependent upon a condition of a part or of the whole system, directly opposed to excitement or irritation; a condition not of diminished vital power but of diminished action. It may result from irritations in a part or organ of the system, of which sedation in another part or organ is a common consequence; from previous inordinate excitement, great muscular effort, the indulgence of animal passions, or from the relaxing effects of heat with or without moisture. Or it may result from mechanical causes, as severe contusions or concussions; from the abstraction of the natural stimuli—caloric, as it influences a portion or the whole of the body; oxygen in respect to the lungs; food in respect to the stomach; bile in respect to the intestines; mental and moral sentiments in respect to the brain, etc. Or, finally, it may be induced by certain medicinal agents, sedatives, narcotics, antispasmodics. The leading effect of sedation is the diminution or suspension of the proper functions of the tissue or organ involved. Applying the pathological views of sedation developed in the first chapter of the closing part of the treatise, especially to the womb and its appendages, Dr. Hodge is led to the consideration of its most prominent phenomenon, amenorrhœa—the non-appearance or arrest of the menses—a phenomenon that is in every case in which it occurs simply a sign—a symptom of abnormal states of the uterus, of the ovaries, of the secretory organs, or of the general nervous and vascular systems, by the removal of which alone, when remediable, can the menstrual flux be established or reinduced.

The whole subject of sedation, whether in its general aspect, or in reference especially to the uterus and its associated organs, is one replete with the deepest interest and importance. In regard to it opinions the most erroneous have been entertained, that have led to mistakes in practice of a very grave character; we would recommend an attentive study of the views presented in respect to it in the treatise under review. They bear the impress of truth, and will, we believe, be found trustworthy guides to the proper therapeutical indications in all the diseases of sedation, but more especially to that dependent on sedation of the uterine organs.

What gives to the treatise of Dr. Hodge its chief value, and will cause it to be received as an original contribution to pathology and therapeutics, is not so much its teachings in respect to uterine displacements and their treatment, as the doctrines it announces in respect to the nature and character of the purely nervous affections, irritable diseases, and nervous irritations; showing that they are not the mere conceptions of a disturbed enervation, the appendage of some chronic phlegmasia of this or that tissue, but original maladies, having an actual existence and local habitation; being, in fact, physical and not solely moral disturbances, and demanding therefore for their removal physical as well as moral remedies.

ART. III.—1. *Rational Medicine: Its Position and Prospects.*—An Oration delivered before the members of the Hunterian Society, on the 15th February, 1860. By STEPHEN H. WARD, M.D., LOND., M.R.C.P., Physician to the Seaman's Hospital "Dreadnought," Vice-President of the Hunterian Society, etc. 8vo., pp. 52. London: John Churchill, 1860.

2. *Currents and Counter-Currents in Medical Science.*—An Address delivered before the Massachusetts Medical Society, at the Annual Meeting, May 30, 1860. By OLIVER WENDELL HOLMES, M.D. 8vo., pp. 48. Boston: Ticknor & Fields, 1860.

THE first address, at the head of this article, delivered on the forty-first Anniversary of the Hunterian Society, by its Vice-President, Dr. Stephen H. Ward, is an able and dignified exposition of the position and prospects of what the author is pleased to denominate *Rational Medicine.* The spirit in which it is written is highly commendable, for, while the author expresses his views clearly, and with a complete sense of the responsibility resting upon him in so doing, he deals kindly with his professional brethren, and cordially acknowledges the value of their investigations and labors for the amelioration of disease; so that, although we are unwilling to go quite as far as he does in our ideas of general expectant treatment, we cannot but feel that his intentions are good, and his love for the profession of his choice unabated.

His position is thus defined:—

> "Under the term *medicine,* I embrace its different branches, and the art as well as the science; and I call that *rational* medicine which has its foundations laid in a recognition of Nature's resources in disease as well as in health;

which feels that its object is science, not mystery; which, for its advancement, has recourse to philosophical appliances and methods of investigation; which acknowledges no means but such as are adequate to ends; which holds hypotheses upon uncertain tenure, ready to relinquish them as fresh compelling facts flow in; and which, eminently eclectic, avails itself of what is good in all systems, and is yet slave to none!"

No position could be more satisfactorily explained. This is precisely the ground occupied by every scientific physician, and all such practice upon the rational method; we therefore sincerely deprecate the attempt to force upon us the belief that an old idea is new—that the *vis medicatrix naturæ* has just been discovered. We would be better satisfied did our author simply attempt to show that in our over-anxiety to master disease, many, perhaps most of us, have partially lost sight of the fact that we are the *servants*, not the masters of Nature, and *tend* to err on the side of over-medication. That unscientific and ill-informed practitioners should be polypharmacists and over-dosers is not strange when the cry of the sufferer is for immediate and visible means of relief; but that these instances should be permitted to reflect discredit on the established principles of medicine, is unfair in the extreme.

We also object strongly to the statement that medicine "avails itself of what is good in all systems,"—that is, if the various irregular practices of the day are referred to; but we cannot think that our author intended this construction; yet, as this assertion without limitation is sometimes made by others, we take occasion to deny that we go abroad either to hydropathy, homœopathy, or any other pathy, to cull and borrow. Whatever is good in these systems has been taken from medicine proper as a basis for the excrescences which constitute them, and after the chaff has been blown away, nothing remains but that which belongs to legitimate science. The fountain does not look to the turbid stream to vivify its crystal waters, and the rain drops which replenish it, yield up its own, and that alone.

"A consideration of the position and prospects of rational medicine," it is stated, "resolves itself into the causes affecting such; and these may be arranged under two heads, *philosophical* and *ethical*."

Under the *philosophical* causes, he speaks of the use of the speculum and stethoscope, of microscopy and chemistry, and of the application of logic to medical inquiry, treating, as parts of this, of observation, the numerical method, and hypotheses.

Under the *ethical* causes, he enumerates, the spirit in which it is prosecuted, the conduct of the members of the profession toward one another, and considerations of a political and social nature.

In the consideration of the *philosophical causes*, while our author acknowledges, and bears a just tribute to, the usefulness of the speculum and stethoscope, the microscope and chemical agents in the hands of able workers, in greatly enlarging and strengthening the scientific basis of medicine, notwithstanding the subtle character of the phenomena of life both in health and disease, yet he is assured that the very instruments by which advancement has been mainly effected contain within themselves the elements of abuse. And he thinks that we are too ready to exchange the old and tried for the more fascinating new lamps, and to be attracted by that which is tangible, which speaks directly and speciously to the mind through sight, hearing, and touch, conveying a present sense of power, rather than by the larger contemplation of complex phenomena, and the postponed conclusions it entails. And his effort is to show that these agents have been abused, not only in their improper use, but in the attempt to set up exclusive claims for them as individual arbiters of disease, whereas they should occupy entirely subordinate positions in their influence upon medicine.

He appreciates the value of the stethoscope and speculum, and simply refers to the abuse of the latter in unprincipled hands. Concerning the microscope, while duly according it high rank among the means of advancing anatomy, physiology, pathology, diagnosis, and medico-legal inquiry, he thinks that "too much time is being devoted to it by the school of young medicine," and says truly that undue devotion to this means of inquiry induces a narrow view of disease and treatment, occupying much time to the exclusion of higher considerations. In regard to chemistry, he gives it the credit of determining the composition of the solids and the fluids of the body, of aiding clinical medicine by analyses of excreted fluids, and in special therapeutics of substituting active and elegant, for crude and bulky preparations; but with great force remarks: "I cannot, however, admit the higher pretensions which some chemists have claimed for their science in reference to physiology, pathology, and therapeutics; the pretension of explaining the phenomena of sciences in which vitality plays the prominent part, or of predicating from the results of laboratory experiments, what should take place in the living organism." He then illustrates his meaning by showing that observation and experience have proved the food theory of Liebig to be, in great degree, erroneous; that alcohol is not simply a heat-making fluid, but, besides being an arterial and nervous stimulant, it doubtless, by healthful use, prevents the waste of the tissues, and thus becomes a substitute for a given amount of food. He also shows that the attempt to explain the action of drugs on purely chemical grounds has failed, since, instead of observing an operation in a clean retort affording complete isolation from disturbing influences, our calculations are affected by the presence of nervous force and the inherent vitality of the receptacle. Drugs therefore act, not upon chemical grounds alone, but by influences other than those based upon chemical reactions; thus nitrate of potash, which has been thought to act in acute rheumatism by solving the fibrin which is in excess, by its known power of reducing the action of the heart, must no less aid the curative process.

Again, the author asserts that he has no desire to detract from the merits of microscopy or chemistry. He says:—

> "I only desire to protest against their exerting an undue influence, and absorbing too exclusively our time. I wish to respect the study and laboratory as important adjuncts to the chamber or the ward, not, as they are being made by some men of the rising school, the principal theatre of the medical man's researches. It should ever be remembered, that in disease as in health we have to deal with that principle which proclaims its presence in countless phenomena of life, but which the keen scalpel of the anatomist, the powerful object-glass of the microscopist, the subtle test of the chemist, must ever fail to detect."

Observation, being at the basis of all reasoning, we are properly told, should be exact and comprehensive; and that many of the contradictory experiences of medical men are owing to incorrect and defective observation—that improved habits in this particular are required; besides which the want of attention to the larger phenomena of disease leading to confidence in prognosis, and to the recognition of crises and periodicity, is deplored.

The *numerical method* is believed not to admit of a very liberal application to medicine, as it is only of use in determining general facts, since many apparently similar cases differ materially in particulars, the result of modifying influences producing complex phenomena.

Hypotheses are held to be absolutely essential to science, as they are but steps in the progress to something more certain; but they must be built upon a sufficient basis—not being mere arbitrary conjectures; and are to be relinquished as fresh facts compel. Still, the usual steps in the process of reasoning are to be carefully employed to arrive at principles of much higher value than those based on mere empiricism.

The author believes that the philosophical appliances and the philosophical method of investigation to which he has alluded, have done much for the science of medicine, but far less for the art, in which "the labor has truly ever been in a circle, the alternating links of which have been disease and drugs." The cause of this difficulty, he thinks, is that professors of the healing art have never taken, "as the basis of their reasoning, the curative resources of Nature herself, as ascertained by study of the natural course of disease," and that consequently all their ratiocinations upon the actions of medicines have been founded on the comparison of one method of treatment with another; and that this is the main cause of "much of that uncertainty which has been the scandal and reproach of our art."

He believes that if the proper confidence in the inherent restorative powers of the constitution were felt, acknowledged, and acted upon, cures would not be, as they often are, falsely attributed to remedies on the *post hoc ergo propter hoc* principle, which is the great argument in support of quackery, backed up by the system of polypharmacy of orthodox practitioners, "which has weakened their position in regard to remedies where they are undeniably beneficial, and detracted from the credit which has ever been justly their due, of having been alive to the importance in the treatment of disease of modified hygienic measures."

"A conviction of the large powers of Nature, and the comparatively limited powers of art, in the cure of disease," he says, "is, I am satisfied, daily gaining ground;" and he adduces in support of his position the views of Sir J. Forbes, who insisted upon the necessity of obtaining a knowledge of the course of diseases unbiased by special therapeutical remedies;—of Dr. Hughes Bennett, who insists upon our reading the book of Nature for ourselves, no longer led by the comparatively blind guides of the past, but with the light of advanced knowledge which has united physiology and pathology by showing, in regard to the laws of nutrition, that what is generally regarded as morbid is but healthy action modified to suit altered circumstances, deducing therefrom that we must economize, not depress the reparative powers;—of Dr. Todd, who enunciated almost similar pathological views, deducing hyper-stimulation as treatment, (with which, however, Dr. Ward does not agree);—and his own experience in the Dreadnought Hospital, and in his practice in fevers, dysentery, and other diseases.

To show "that a large number of diseases will do perfectly well without, and cannot be curtailed by, any special interference of art," he instances the exanthemata and fevers, in all of which nature sets up a process with a view of expelling the poison introduced from without. "In such diseases little is to be done beyond studying their natural course, and carrying out indications." For such he objects to the uniform adoption of a special plan of treatment for certain complications, as laid down in systematic treatises, and, in support of this view, refers more particularly to typhoid fever, in which he has observed, in cases uninfluenced by any special treatment, that the diarrhœa, especially in the absence of much eruption, is the principal part of the effort of Nature to eliminate the poison, and as such should not be unduly interfered with, under penalty of danger. His view of the treatment of such cases seems to be summed up as follows:—

"I would add my protest against undue interference in fevers or the exanthemata, either in the way of stimulation or elimination, for Nature generally admirably adapts her operations to the powers of the patient. When she is unequal to her task, the assistance of the medical practitioner will, of course, be required."—

In accordance with which, he has previously stated that, in enteric fever, "should the evacuations be copious and exhausting, astringents and opium may be necessary," and subsequently, that notwithstanding the unaided powers of the system are frequently adequate to the repair of formidable dysenteric lesions under favorable hygienic conditions, rest, etc., yet he has met with cases which only yielded to the cautious and protracted administration of mercury.

"Having thus alluded to some diseases which, as a rule, the conservative powers implanted in the system are quite adequate to remove," the orator thinks it but right that he "should glance at others in which the assistance of art is more or less indispensable." He has found quinine necessary in ague, iodide of potassium in tertiary syphilis, iron in anæmia, cod-liver oil in struma, certain drugs to give mechanical relief in dropsy, opium and other anodynes as palliatives, and acknowledges that the rational co-operation of special medicines is required in many instances in which hygienic arrangements are alone inadequate.

Thus fully admitting the value of special therapeutics in particular cases, we are exhorted to abandon our position upon those points where weak and indefensible, and, by testifying to our reliance upon general therapeutics, strengthen ourselves in special matters where the ground is tenable, while we are assured that by a full recognition of Nature's resources in disease, medicine will make a more rapid and healthier progress, and that the practitioner "will be sustained by the conviction that his services will be as much needed as ever in his capacity of '*Naturæ minister.*'"

In the consideration of the *ethical causes* which influence the position and prospects of rational medicine, the author, with true dignity, avoids any attack upon quackery, but reprehends "any undue grasping after, or indirect means had recourse to of obtaining, practice; any attempt to make capital out of the unavoidable errors of others; or habitual exaggeration of cases and cures;" and asks us to consider whether this exists among us, great or humble, notwithstanding that men of the right spirit are undoubtedly with us.

He insists on the necessity of a uniform high standard of qualification being adopted by all examining boards, and alludes to the injurious operation of local measures upon the profession in England. Among these is the closure to medical men of the higher posts of honor, such as the legislature and the peerage, which incite members of other professions to intellectual effort. Besides which the colonial administrative offices, where medical experience is needed, not being, as a rule, filled by men most competent to speak on the subject of health, must be injurious to the prospect of the advancement of rational medicine, as also must be the method of electing medical men to offices under poor-law boards, in private charities, etc., by those who are in most instances entirely incompetent to judge of the respective merits of the candidates, or to appreciate the value of services rendered. And in truth many of these difficulties in England are not foreign to the United States.

Lastly, he says:—

> "Rational medicine builds its expectations upon no one thing so much as upon the extension of education. It would fain see knowledge, and especially a knowledge of the natural sciences, diffused through all classes of the community." And further, "I am quite alive to the importance of instruction in the dead languages, but I desire to see some of the time devoted to them, set apart for the study of the living forms and actions of Nature, and of the laws which regulate organic life. At present there prevails all but complete ignorance of natural science, not only among the lower, but among the higher and in other respects, more educated classes. Such study has never formed part of the scheme of education at our foundation schools and older universities. It is this ignorance of Nature's laws, and especially of those which regulate life, which is the keystone to the fact that various forms of quackery are embraced by our statesmen, literary men, and by members of other learned professions; and that men give their judgment with ready confidence upon medical questions, who would think it the height of assurance for any unfurnished individual to pronounce upon their own avocations."

Without doubt, in this matter, he is clearly in the right.

In conclusion, he yields a glowing tribute to medical men for the large services which they have rendered the public in times of disease, pestilence, and death, on the battle-field and in the beleaguered city, and for their love of enterprise and scientific research, which has made many famous in the annals of every department of exact science, by the same method of philosophical investigation employed in medicine, where success has been but partial from the very nature of the case; and declares that both philosophically and ethically they have proved true to the best interests of their profession.

We have read this address with great satisfaction, because it contains much good, sound sense, and the views presented are for the most part well timed and kindly enforced; but we opine that the Doctor has *not* proved *conclusively* what he evidently set out to accomplish,—that Nature, or the inherent conservative power of the system, is adequate, in the *majority* of instances, to a cure, without the aid of art. It is true, he has shown us that certain fevers and exanthems having a recognized course, can only be watched, and untoward symptoms treated as they arise; that certain dysenteries and pneumonias are well managed by hygienic means alone, etc.; but he does not claim universal success by trusting to Nature entirely, even in these, nor do we find him selecting examples of cholera, pseudo-membranous croup, diphtheria, typhus, or yellow fever, to prove that recovery will in general be the result when the disease is subjected to favorable hygienic conditions alone. He has only shown, with fresh force, that in the treatment of disease we must *fully* recognize the *vis medicatrix naturæ*—that this is the basis upon which all our hopes of success must depend—that the laws of Nature in disease must be respected, and all our effects, to be useful, must be produced in accordance therewith—that there has been, and is, a *tendency* to forget these facts, and to place an undue reliance on special diagnostic means and drugs. We do not perceive that anything else has been shown, or that a startling revolution in the practice of medicine will be likely to follow.

We have gone thus extensively into the consideration of this pamphlet for the purpose of contrasting with it another, under a different title, but really on the same subject, and which appeared a short time subsequently, viz.:—

The address on Currents and Counter-Currents in Medical Science, delivered by Oliver Wendell Holmes, M.D., Professor of Anatomy and Physiology in the Massachusetts Medical College, a branch of Harvard University. This is perhaps one of the most curious productions among the fugitive medical literature of the day to which our attention has been directed. When we opened it for perusal, we certainly expected to find no very great excess of medical faith, for medical experience does not seem to be in the author's peculiar line, but we were not prepared for a sweeping tirade against the profession as a body, with insinuations more or less direct, concerning the probity of its members, coming from an individual who has been actively employed in fitting many of them for their vocation, and who had been so honored by his general associates as to be placed in perhaps the highest position in their gift. This position he has with peculiar indelicacy taken advantage of to castigate them unmeritedly and unmercifully, so that we are not at all surprised to find, at a meeting of the Massachusetts Medical Society, subsequent to that upon which this much-to-be-deplored speech was delivered before them, that it was

> "*Resolved*, That the Society disclaim all responsibility for the sentiments contained in this Annual Address."

Our author commences with a eulogy on the professional dead who departed during the interval of the Society's annual meetings. He tells how near the physician comes to the hearts of the people, how he is the *main reliance* in sickness, how he is valued when living, and how his memory is cherished when dead; and we would believe him sincere, did not his subsequent writing prove his first paragraph, viz.:—

"Our annual meeting never fails to teach us at least one lesson. The Art whose province it is to heal and to save, cannot protect its own ranks from the inroads of disease and the waste of the destroyer"—

To be the medium of a concealed sneer, and that his opening tribute to his brethren does not accord in any sense with his estimate of the value of the means which they employ, since their lives must be, according to his own showing, one vast waste of energy, an eternal labor in the wrong direction, one vast round of error and deceit.

The incompetency of medical art is consequently the burden of the discourse, the heads of which we shall directly present. It is firstly asserted that

A medical man, after twenty years of practice, is apt to suppose that he treats his patients according to the teachings of his experience,—that this may be true to some extent, but that it can be easily shown that the prescriptions of even wise physicians are very commonly founded on something quite different, such as fashionable special remedies, or popular theories which will be unrecognized at a future period, and only viewed as a fashion of the by-gone time,—that there are in every calling those denominating themselves *practical men*, who go about the work of the day before them according to the rules of their craft, asking no questions of the past or of the future, and who, pulling the oars of society, have no leisure to watch the currents which carry them this and that way, rendering their work worse than useless unless they get out of the wrong and into the right ones, so that, if they look not up and around, they are carried to ends little dreamed of, as is the case with the physician who, calling himself a practical man, refuses to recognize the larger laws which govern his changing practice.

"The truth," he goes on to say, "is, that medicine, professedly founded on observation, is as sensitive to outside influences, political, religious, philosophical, imaginative, as is the barometer to the changes of atmospheric density." And, in support of this statement, he proceeds to "observe the coincidences between great political and intellectual periods, and the appearance of illustrious medical reformers and teachers," from the age of Plato and Hippocrates to the time of Benjamin Rush, who, he believes, was the intellectual offspring of the movement which produced the American Revolution.

That medical men of twenty years' experience should be *apt* to suppose that they treat their patients according to the teachings of experience, is not strange, and we think it not unlikely that their view of the matter will prove, as a rule, to be correct, Dr. Holmes to the contrary notwithstanding, since men of any judgment, especially teachers and leaders in medicine, found their practice upon accumulated observations, and whatever hypotheses are formed as a basis for their theories, result from such observations; these, however, may be incomplete or influenced by disturbing causes, which, after a time, being discovered, lead to new observations, the eliciting of fresh facts, a consequent modification of theory and improved practice. Essential changes, therefore, at the present day, in the treatment of disease, do not relate to fashion, either in theory or in practice, but depend upon the experience of the wise physician. It is certainly true that he who fails to recognize the larger laws of disease retrogrades while he seems to advance, but such a one is simply a practitioner, not a physician. That the impetus to the prosecution of medicine is influenced by the predominant tendency of the age, is a point which, perhaps, none will care to dispute; but that its sensitiveness to the outside influences enumerated is as delicate as that of the barometer may be considered as a poetic license of the widest latitude.

With this exposition of his general views, our author introduces us to the "main intellectual current of the time," and points out "some of the eddies which tend to keep the science and art of medicine from moving with it, or even to carry them backwards."

After some little difficulty, from the peculiarly loose and rambling character of the discourse, we have extracted the following heads:—

> "We who are on the side of 'Nature,' please ourselves with the idea, that we are in the great current in which the true intelligence of the time is moving."—

Nature, being previously and afterward described to be, trust in the reaction of the living system against ordinary normal impressions, as opposed to Art, or *professional tradition.*

The eddies or counter-currents are—

Confidence in the use of drugs, resulting in over-medication;
Natural incapacity for sound observation;
Inability to weigh the value of testimony;
Inveterate logical errors;
Outside pressure of dose-loving public;
Old superstitions and false theories;
The practice of making a profit on the medicine ordered;
Certain special American influences;
Medical journals which must find wonderful cures to fill their pages;
Teachers in medical schools, in cities and wandering over the country, claiming as much as possible for our art.

These latter, then, are some of the counter-currents which, we are told, are *hindering* the onward progress of medicine, "that withered branch of science," as we are reminded it was called at a meeting of the British Association, which, Dr. Holmes informs us, it is so painful (!) for him to remember. And all these divisions are treated with an exaggeration and a flippancy entirely, we think, unbecoming one who lays claim to be considered a philosopher and a scholar.

We have a preliminary panegyric on Boston, in this wise: "If there is any State or city which might claim to be the American headquarters of the nature-trusting heresy, provided it be one, that State is Massachusetts, and that city is its capital." To this we might reply, in the same strain: In the name of the prophet, figs! while we assert that Boston is no more nature-trusting than other cities, and that the effect of such doctrines is only injurious to the profession by undermining the confidence of the public in it (as he suggests that some suppose) when advanced to the untenable extreme of the writer, who believes—

> That if every drug from the vegetable, animal, and mineral kingdom were to disappear from the market, physicians would exist, be required, and respected as now, whose province should be to guard against the causes of disease, to eliminate them if possible when still present, to so order the conditions of the patient that the system might right itself, to predict the course of disease and thereby calm the exaggerated fears of sufferers and their friends, or warn them in season of impending danger.

Most wonderful, therefore, would be the duties of physicians, who perhaps will be enabled to some extent to take this stand when the Millennium arrives, which will be, in all probability, the earliest period when the *causes* of disease will be absent, and consequently their effects; but until there is a complete change in the condition of human affairs, causes *will* exist to produce disease, which "Nature," unaided by Art, cannot carry to successful issue.

We would be pleased to discover where the power of unaided Nature lies, notwithstanding its tendency, to cure cholera asphyxia, violent cholera morbus, syphilis, intermittent fever, and a host of other ills that flesh is heir to. How would the author himself be pleased should he unfortunately suffer with cholera, arising from some obscure cause, with the attentions of a physician, who, having no faith in drugs, should calmly make his case a study for the natural history of disease, contenting himself by so ordering the patient's condition that the system might right itself? Does he not see that the employment of various remedies, including drugs, has arisen from the very failure of unaided Nature to restore, or from a certainty that by their judicious use, the powers of Nature are so guided or quickened as to cut short the course of the disorder? We confess a decided partiality to drugs when used and not abused, and believe that faulty observation, inability to weigh the value of testimony, the enumeration of successful cases only, the *post hoc ergo propter hoc* error, and the assumption of falsehood for fact and reasoning thereupon, which he touches upon as the ordinary modes of misunderstanding or misapplying the evidence of nature, are only the errors common to all investigations, and which do not lie against us nearly so much as we would be made to believe. The public, it is true, "insists on being poisoned," as is proved by the extensive patronage which they give to nostrums; but we do not think that the enlightened profession is hurried into extreme activity by it, nor do we think that this is the result of the superstition "that disease is a malignant agency or entity to be driven out of the body by offensive substances," or of "the detestable old superstitious presumption in favor of whatever is nauseous and noxious being good for the sick," still lingering in the minds of the public and the profession, but, of a well-attested observation, that Nature herself, in very many instances, unaided, is inadequate to a cure, together with an almost total want of knowledge on the part of the public, of either human structure or functions, which renders many an indiscriminating and easy prey to the specious advertisers who profit by their illness and ignorance.

As an example of the false theories which hinder the progress of medicine, the received notion of the condition of the tongue indicating in anywise that of the alimentary apparatus, is advanced as eminently striking, and we are indulged with the following highly philosophical remarks:—

> "One practical hint may not be out of place here. It seems to be sometimes forgotten by those who must know the fact, that the tongue is very different, anatomically and physiologically, from the stomach. Its condition does not in the least imply that of the stomach, which is a very different structure, covered with a different kind of epithelium, and furnished with entirely different secretions. A silversmith will, for a dollar, make a small *hoe*, of solid silver, which will last for centuries, and will give a patient more comfort used for the removal of the accumulated epithelium and fungous growths, which constitute the 'fur,' than many a prescription with a split-footed ℞ before it, addressed to the parts out of reach."

In illustration, we are furnished with the wonderful history of the great prototype of this invaluable tongue-scraper, and told how, in conjunction with infusion of strawberry leaves and sassafras root, it *cured* a case of typhoid fever, thus saving the colony at Plymouth in 1623, through the gratitude of the patient, and thereby indirectly resulting in the formation of the Massachusetts Medical Society. All this, doubtless, shows the *hoe* to be a very wonderful instrument, which should, therefore, we think, occupy a conspicuous position on the seal of the society, but, it does *not* show that the vascular system of the mucous membrane of the mouth and tongue is not continuously or sympathetically affected by morbid conditions of the same system in other parts of the alimentary mucous membrane, and that the resultant epithelial formations, although different in shape, cannot assume appearances which are indicative of trouble elsewhere.

The author deals with the practice of making a profit on the medicine ordered, as if it were a prevalent custom among physicians of the present day, and suggests, as a remedy, the abstraction of the cost of the drug from the consultation fee, instead of its addition. Now it is well known, that in all large cities, where the population is sufficient to warrant it, the business of compounding prescriptions is not in the hands of the prescriber, and that the Code of Ethics, binding upon all, expressly forbids collusion with the apothecary; while in the country, it is absolutely necessary for the physician to carry his own remedies and compound them, for which trouble he is hardly ever adequately remunerated. Our author, therefore, gratuitously insults the profession by directly charging on it sordid motives as influencing treatment.

The reference to other special American influences seems intended merely to introduce an attack upon Dr. Benjamin Rush, whose confidence in remedies, thereafter shaping American practice, is thus set forth :—

> "But he could not help feeling as if Nature had been a good deal shaken by the Declaration of Independence, and that American art was getting to be rather too much for her,—especially as illustrated in his own practice," etc.—

And then, after a few elegant allusions to a people "which has *chewed the juice* out of all the superlatives in the language," asks—

> "What wonder that the stars and stripes wave over doses of ninety grains of sulphate of quinine, and that the American eagle screams with delight to see three drachms of calomel given at a single mouthful?"

What professional man can fail to be delighted with language so choice, so poetic, so ennobling, especially if taken in connection with a statement on another page, where, in endeavoring to show that the search for remedies has been more anxiously pursued than the study of the causes of disease, we are told that—

> "The very men who were discussing the treatment of the disease were stupidly conveying the infection from bed to bed, as *rat-killers* carry their poisons from one household to another."

In the anxiety to prove that attention to the obliteration of causes will do almost everything, it is said, with peculiar indelicacy, that if we do not succeed in this, we are to be—

> "Reasonable and patient with Nature, who means well, but does not like to

hurry, and who took nine calendar months, more or less, to every mother's son among us, before she thought he was fit to be shown to the public."

How our respect increases as our reading progresses!

We regret that our limits do not allow us to investigate much further the matter before us, for we should like to refer to the author's definitions of Nature, Art, Disease, Food, Medicine, and Physic, with which he paves the way to the subjoined propositions:—

> 1st. That disease and death are necessary in the present order of things.
>
> 2d. "The *presumption* always is that every noxious agent, including medicines proper, which hurts a well man, hurts a sick one."
>
> 3d. "Lastly, medication without insuring favorable hygienic conditions, is like amputation without ligatures."

Under the first head it is acknowledged that we must, from our imperfect intelligence, necessarily fail to keep the laws of the physical and spiritual universe, and that "Disease is one of the *penalties* of one of the forms of such failure;" and the author goes on to say:—

> "But it is especially the *prerogative*, I had almost said *privilege*, of educated and domesticated beings, from *man* down to the *potato*, serving to teach them and such as train them, the laws of life, and to get rid of those who will not mind or cannot be kept subject to these laws."

Well done, Professor of Anatomy and Physiology! Is a potato then really an educated and domesticated being? And thus, potatoes, from their failure to keep these laws, must unite with men in possessing in one curious result, a penalty, a prerogative, and a privilege; certainly a most extraordinary combination.

And we are further led to infer that particular diseases must be blessings in disguise, since "the race would be ruined if art could ever learn always to preserve the individuals subject to them."

Under the second head, it is taken for granted that all noxious agents, that is, medicines proper, cost the patient five per cent. of his vital force, and then the profession is thus elegantly complimented:—

> "In the game of Life-or-Death, *Rouge et Noir*, as played between the Doctor and the Sexton, this five per cent., this certain small injury entering into the chances, is clearly the sexton's perquisite for keeping the green table over which the game is played, and where he hoards up his gains."

In continuation, the professor's eminently philosophical views on the value of medicine are thus set forth:—

> "Throw out opium, which the Creator himself seems to prescribe, for we often see the scarlet poppy growing in the cornfields, as if it were foreseen that wherever there is hunger to be fed there must also be pain to be soothed; throw out a few specifics which our art did not discover, and is hardly needed to apply;

throw out wine which is a food, and the vapors which produce the miracle of anæsthesia, and I firmly believe that if the whole materia medica, *as now used*, could be sunk to the bottom of the sea, it would be all the better for mankind,—and all the worse for the fishes."

But why should we go further? We are already nauseated by the noxious stuff! We were led to believe, from the known literary ability of the orator, that we were to enjoy a pleasing discourse on the currents and counter-currents in medicine—we have risen from the perusal, convinced from many wonderful coincidences in headings, that Dr. Holmes, having had the advantage of reading the previous address of Dr. Ward, has appropriated his topics, and, transposing them, has employed them, unlike the latter in a delicate and philosophical manner to the purpose in hand, but as texts for an absurd and insulting tirade upon his Fellows, to which the severest reprobation would scarcely do justice. Not only, indeed, has he insulted the profession in general, but his immediate colleagues who are the teachers of materia medica and practice, obstetrics and surgery, cannot escape the blow. We wonder that he can remain any longer in communion with gentlemen, who, if they be true to the interests of science, must feel that he has belittled and disgraced it and them. We trust that this example will teach medical societies, all over the country, that when they appoint a man to address them upon their science and their art, it should be one who has *some* actual experience in the practice of his profession, and who is not a mere magazine writer and poet, as we fear has been the case in the present instance. The address of Dr. Holmes is in the worst possible taste, and we therefore regret that it was ever published, although we sincerely believe that in this instance the poison carries with it its own antidote.

ART. IV.—1. *Traitê des Applications de l'Électricitê a la Thêrapeutique Mêdicale et Chirurgicale.* Par A. BECQUEREL, Médecin de l'Hôpital de la Pitié, etc. Deuxième Édition. 8vo., pp. 550. Paris, 1860.

Treatise on the Applications of Electricity to Medical and Surgical Therapeutics. By A. BECQUEREL, Physician to the Hôpital La Pitié, etc. 2d edition, etc.

2. *De la Galvanisation par Influence appliquês au Traitement des Dêviations de la Colonne Vertêbrale, des Maladies de la Poitrine, des Abaissements de l'Utêrus,* etc. Par le DOCTEUR J. SEILER. 8vo., pp. 159. Paris, 1860.

On Galvanization by Influence applied to the Treatment of Deviations of the Vertebral Column, Diseases of the Chest, Prolapsus Uteri, etc. By DR. J. SEILER. 8vo., etc.

3. *Electro-Physiology and Electro-Therapeutics; showing the best Methods for the Medical Uses of Electricity.* By ALFRED C. GARRATT, M.D., Fellow of the Mass. Med. Society. 8vo., pp. 708. Boston, 1860.

THE applications of electricity to the uses of the physician form a prominent feature in the more modern treatises on therapeutics. Like most remedial agents which have received popular attention, this potent stimulant deserves a large share of the consideration which has been bestowed upon it, but has been pushed by its enthusiastic admirers occasionally farther than its merits or its utility would justify. We thus see it called upon, like some of its older associates in the list of the materia medica, to do active service in the cause of therapeutics, under a thousand varied circumstances, when rational philosophy and sound reasoning would teach the advocates of its employment that its powers should be limited to fields from which it cannot be abstracted with any probability of success. We are quite sure that some of the applications of electricity, in whatever form it may be employed, which works on that subject recommend, are but suggestions for its use, which have not been, and probably cannot be, carried out with benefit to the patient or with satisfaction to the practitioner.

A few of them perhaps are founded upon the enthusiasm of ardent advocates of its utility, while others seem to be suggested by a reasoning from analogy that because this peculiar mode of medication is applicable in one class of cases, it may be safely and successfully resorted to in those which appear to have a similarity of pathological phenomena. Nevertheless, the uses of electricity are so numerous, and its modes of application so varied, that these very suggestions, though often founded on erroneous premises, may, by opening out a new field of thought for the practitioner, lead at last to conclusions which may be of practical utility to mankind, by increasing the domain of curative medicine, and by relieving conditions of otherwise helpless prostration.

We have been led to these thoughts by a glance at the number of works on this one branch of medical science or art—whichever we may call it—with all its ramifications, which have appeared within the last few years, emanating from the pens of European and American writers. The three works whose titles head this article are perhaps among the latest of those issued in France and America. The treatise of Dr. Seiler, unlike those of Drs. Becquerel and Garratt, is devoted to the consideration of a few special morbid conditions, and the application of a special form of electrical influence to their treatment. The other publications contain all that it was practicable to obtain upon peculiarities of electrical instruments, and the conditions under which they may be made subservient to worthy uses in the hands of the physician. Let us first examine as a novelty the mode in which Dr. Seiler employs the powerful agent for good or evil which chemical science long since bestowed upon the persevering inquiries of the philosopher.

In 1853 the author undertook a series of experiments with the view of discovering, if possible, a means of producing local insensibility. Among other experiments, he employed the currents of electro-galvanic influence, after the manner of magnetizers, by making passes, with the excitors, over particular portions of the body, through the clothing, and without touching the skin of the patient, so that there was no discharge of the electric spark. But these experiments being unattended with satisfactory results, others were instituted, and he found in one instance, a person recognized subsequently as having an extraordinary muscular excitability, that the arms became numb, the muscles contracted, and there was great difficulty in moving the fingers. There was no absence of sensibility. By further experiments and by modifications of the apparatus, he found it possible to produce in almost every case tolerably powerful muscular contractions or rigidity, which lasted several hours.

The peculiar apparatus, which in Dr. Seiler's hands has been attended with the most satisfactory results, is minutely described in his work. The details of its construction might, if critically examined, possess some interest to the chemist, but our limits prevent us from giving them at length. The liquids used are concentrated nitric acid, hydrochloric acid, and distilled water; the constancy of action being given to the battery, as Dr. Seiler thinks, by the addition of the hydrochloric acid.

The sensations experienced by the patient to whom the battery is applied, are at first those of elevation of temperature, extending along the surface and deeply into organs, without the slightest appearance of redness externally; a sedative action on the system, calming all pain, at least momentarily, as evinced by its power to relieve toothaches and neuralgias; and a sense of increased vigor, as if it had exerted a decided tonic action also; gradual contractions of the muscles, increasing in intensity, and being succeeded, if long continued, by vertigo, headache, fatigue, etc. In some of the more sensitive cases submitted to his experiments, Dr. Seiler produced what he calls a localized cataleptic attack, (*catalepsie localizée,*) and he was induced to extend the application of the results at which he had arrived, to the treatment of certain morbid conditions, from his observation that it was merely necessary to change the places of application to obtain very uniform contractions in the different muscles of a part. It was this fact which led him to employ this mode of treatment in deviations of the vertebral column. In his enthusiasm, he appeals to its tonic agency to strengthen the nervous system, give vigor to the movements, and good spirits to cheer the consumptive.

The special morbid conditions in which Dr. Seiler deems his apparatus applicable as a means of relief are very diversified in their nature and pathology, as deviations of the spinal column, phthisis, (by producing dilatation of the chest,) laryngitis, asthmatic affections, prolapsus, etc. of the uterus, and some cases of neuralgia. After referring to the value of spirometry as a "most precious means of diagnosis," a not infallible one, physiologists tell us, he remarks :—

> "Persons whose conformation of body presents all the signs of a tuberculous diathesis, or who are already subjects of that disease, carry themselves badly and stoop while walking, or sink down as soon as they are seated, from a relaxation of the tone of their muscles. With such cases I commence by exciting a strong rigidity in the upper part of the back to give afterward to the muscles of inspiration of the anterior surface of the thorax a point of support sufficient for their action. After having straightened the back, I pass to the chest; I make the patient draw a deep inspiration, and attempt to teach him to keep himself in this condition and to carry on his respiration only with the abdominal muscles and the diaphragm, while I excite a sufficiently strong rigidity. This alone maintains the chest in a state of dilatation for several hours, according to the degree of muscular excitability of the subject and the intensity of the current which has been employed. This rigidity diminishes a little the respiratory movement of the thoracic parietes, but there does not result from it any dyspnœa, because the diaphragm, which seems in some way to share in the galvanic excitement, contracts more in its turn and operates more energetically.
>
> "We may at least be convinced in determining as well as possible the lowest limit of respiration at the base of the lung, that after an energetic galvanization this limit becomes from one to two finger breadths lower. Another fact which I have often had occasion to repeat and verify, and which confirms me in my opinion as to the part which the diaphragm bears in these cases is the following: non-febrile consumptives, when suffering from extreme oppression, find it promptly relieved on applying the excitors of the inductive current to the base of the thorax and to the epigastrium, while if the upper part of the chest is galvanized, this relief is not usually felt until toward the end of the application."

All portions of the chest are not equally dilatable; and on this point, also, we have the authority of Dr. Seiler's experiments.

> "The most difficult part to dilate is the region under the collar-bone. We are constantly obliged to direct the patients to inflate this portion well, and it is necessary, as much as possible, to produce there the greatest rigidity. If this

point is neglected, we run the risk of dilating only the lower part of the thorax, and the vital capacity of the lung is not increased in proportion.

"This dilatation, once obtained, is preserved for years, possibly until the time of commencing decrepitude; and I could mention a large number of cases of dilatation which I effected several years ago, with a success which has lasted to the present time."

A curious condition induced by the use of electricity by influence, in the hands of Dr. Seiler, is also described by him; but much of the description seems to be dictated by enthusiastic zeal, which may have magnified the results obtained. If, however, electricity has any such power over the respiratory apparatus, as Dr. Seiler supposes, his experiments may be well worthy of repetition.

"I must mention here an effect produced upon the very tissue of the lung by electricity by induction, an effect which almost all the persons I have treated have described to me. The greater part of these patients appear to experience, not only upon the skin or on the thoracic walls, but in *the very interior of the lung itself*, the sensation of a soft and agreeable warmth, which, according to them, calms the irritation which excites their cough; this sensation is followed by a feeling of comfort and vital force which relieves the suffering so frequently accompanying the oppression, and this oppression becomes weaker or disappears entirely, because inspiration has become freer. The same patients reply almost unanimously when they are questioned as to details, that before the galvanization they felt in the interior of the lung an obstacle which prevented them from taking a deep breath, which seemed to them to stop about the middle of the chest. There are even patients who imagine that they feel a kind of spasm (?) like a valve, which shuts and stops the inspiratory movement.

"As soon as the galvanism produces its effect, and this sensation of warmth penetrates into the interior of the organ, they experience a dilatation *of the pulmonary substance;* at the same time the spasm, or, as they prefer to call it, the obstacle, which has prevented free inspirations, gives way; the inspirations are deep and the oppression disappears completely, or at least the respiration becomes as easy as the actual state of the lungs renders possible."

How shall we explain this effect of electricity, an effect which, he urges, is not accidental, for he has observed and verified it under all possible forms? The explanation is ingenious, and probably correct; it is the one which presents itself most naturally to the experimenter.

"I admit that in a great number of consumptives the contractile fibres of the minute bronchial ramifications are more or less relaxed, and that the elastic fibres of the pulmonary vesicles lose a part of their elasticity. The expiratory movement remaining then almost entirely confined to the abdominal and intercostal muscles, the expiration becomes imperfect; the vital capacity of the lung is consequently diminished, and the air is only partially renewed within it. Electricity restoring to the contracting fibres their action, and to the elastic fibres their elasticity, facilitates expiration, and naturally renders the new inspiration easier, fuller, and more prolonged."

The remainder of the work is filled with cases and experiments exhibiting a perseverance in the employment of this particular mode of treatment, which, to say the least of it, is worthy of the success which has attended Dr. Seiler's efforts. We have referred mainly to the influence of electrical applications in affections of the chest, because that subject forms so prominent a feature in the work before us. In certain morbid conditions of the uterus, in various forms of neuralgia, and even in two cases of subluxation of the knee, Dr. Seiler found some plausible reason for the use—and, according to him, the successful use—of his remedy. We have devoted considerable space to his experiments and conclusions, because we have thought there was some novelty in his application of electricity, and a great deal of commendable zeal displayed in its adaptation to the relief of certain morbid conditions.

We pass to the consideration of the comprehensive volume of a chemist, physiologist, and pathologist, whose treatise on the application of electricity to medical and surgical therapeutics contains a large amount of useful information on points which have importance alike to physician, surgeon, and the man of general scientific knowledge. The name of the author, occupying as he does the posts of Physician to the Hôpital de la Pitié, and "Professeur agrégé" of the Faculty of Medicine of Paris, is a guarantee that the authority for the facts mentioned in the volume before us is reliable.

The work embraces a far larger number of medical applications of electricity than any we remember to have seen. One peculiarity of the treatise will meet with the cordial approval of many members of the profession, who might otherwise have some difficulty in comprehending in what special forms of disease this stimulant may be appropriately employed. We refer to the numerous subdivisions of paralysis, and the mode in which electricity may be beneficially used in each. In fact, while suggesting the *modus operandi* of special modifications of apparatus in different forms of that affection, it becomes to a certain extent necessary to refer to the pathology of the cases, and thus the author conveys lessons in pathology as well as in therapeutics. The divisions and subdivisions of paralysis constitute almost the whole range of affections in which electricity is employed therapeutically, and the great bulk of M. Becquerel's work is therefore occupied in the discussion of those subjects.

It was in 1857, we believe, that the author published a *Treatise on Electricity*, which was scarcely more than a collection of his clinical lectures at the Hôpital de la Pitié upon its medical relations. Its object was to check the almost universal application of this agent by those who did not belong to the medical profession, to cases in which it was not indicated, or was useless and injurious. M. Becquerel, in a proper spirit of consideration for the welfare of the suffering public, who to their other ailments sometimes incautiously add those which flow from the indiscriminate employment of a stimulant prescribed by ignorant charlatans, thinks the time has come when rules should be established for the methodical and rational use of electrization. He desires also to show in what a large number of cases its employment would be futile, or dangerous, or aggravate the affection the physician wishes to relieve.

M. Becquerel has, with praiseworthy zeal, repeated all the reported cures described in the medical journals, and now publishes the results, whether favorable or unfavorable, in the second edition, which we have before us. The volume, as the author himself says, is as much a critical work as an experimental *résumé.*

Before entering upon the discussion of the subjects embraced in the four general divisions of his treatise, the author gives, as an introductory chapter, an historical account of the medical applications of electricity, embraced in three periods, dating from its earliest employment to the present time. We are almost tempted to correct M. Becquerel's phraseology, and to suggest that the heading of the chapter should read, "*L'Histoire des Applications Françaises de l'Électricité,*" etc., for we look almost in vain for English names among the modifiers of apparatus, or for any that are not indubitably French.

Have the English done so little in regard to the remedial applications of electricity, that they deserve to have their claims wholly ignored in a scientific work professing to give a complete summary of the periods of progress in the use of a valuable remedial agent? We might mention several English works which are deserving of a place in his historical collection, and without which it is scarcely complete.

The history of the applications of electricity to medicine is divided into three very distinct periods.

"The *first* comprehends all that time during which use was made only of the electrical machine, of the Leyden jar, and of other apparatus based upon the application of the results of statical electricity. It extends to the commencement of this century. The earliest work upon this subject appears to have been one by J. Deshayes, of Orleans, in 1740, on the cure of hemiplegia by electricity, six years before the discovery of the Leyden jar.

"The *second*, that in which the galvanic battery, more especially the trough battery, and electro-puncture, were employed, comprises all steps taken from 1800 to 1831—the period of the discovery of the effects of induction.

"The *third* includes finally all that time during which interrupted currents and all the apparatuses of induction were made use of. It comprehends, consequently, the precise period during which the applications of electricity to the healing art have made their fullest development."

We translate from M. Becquerel's treatise the following sketch of the instructions transmitted to the Military Hospital of Algeria, in 1858, and published in the *Military Journal* for September 13th of that year, because it gives in a condensed form so much valuable information on the modes of employing electricity as a remedial agent.

These instructions contain directions for the establishment of electro-therapeutic treatment in different military hospitals, which are indicated. The diseases submitted to this treatment are to form a distinct division, and be under the direction of special physicians. The instructions give also an account of the various forms of apparatus employed in applying electricity; they describe in detail their *modus operandi*, and the care necessary to keep them in order. Then follow rules for the use of these machines. Finally, they furnish a list of the affections to which in the present state of the science the electrical treatment can be applied. It may be interesting to the reader to reproduce them here.

"The affections susceptible of being submitted to the action of electricity are embraced in the following catalogue:—

I—*Lesions of Mobility, or of the Movements.*—Depending on
  1. Tumors developed on the track of the nerves, or in the cranium or vertebral column.
  2. Cerebral hemorrhage.
  3. Softening of the brain.
  4. Lesions of the spinal column.
  5. Traumatic injuries of the nerves.

II.—*Lesions of Sensibility.*
  1. Anæsthesia.
  2. Hyperæsthesia.
  3. Perversions of nutrition.
  4. Applications to surgery.
    a. Aneurisms.
    b. Erectile tumors.
    c. Special cases for the use of the galvanic cautery."

Some of the theories advanced are disputed by M. Becquerel, and especially those which relate to neuralgia, atrophy, and several other affections.

Having thus added to his work a valuable historical summary of medical electricity, which, we may state, ends with the treatise of Althaus, published in London in 1859, the author divides the remainder of his book into three general parts and numerous subdivisions, as follows:—

Part I.—Administration of electricity by means of apparatus in which it accumulates in the static state, or by means of instruments which furnish electric currents.

Chap. I.—Employment of electricity accumulated in the static state, and furnished by ordinary machines.

Chap. II.—Employment of dynamic electricity.
Part II.—Mode of application of electricity to the organism, and its action upon the tissues.
Part III.—Applications of electricity to therapeutics.
Indications and contra-indications.
Chap. I.—Lesions of movements.
1. Paralysis of the muscles of life of relation.
2. Paralysis of the muscles of organic life.
Chap. II.—Lesions of the organs of the senses.
Chap. III.—Muscular atrophy.
Chap. IV.—Applications of electricity to various pathological conditions.
Chap. V.—Applications to surgical affections.
Chap. VI.—Dangers and inconveniences of the employment of electricity.

The indications and counter-indications to the administration of electricity in affections in which it may be employed are referred to.

These indications are:—

"1st. To re-establish the contracting power of muscles deprived of it. 2d. To re-establish general or special sensibility of the organs of the senses, destroyed or simply weakened. 3d. To restore to their normal condition contractility and sensibility, which have been exaggerated or perverted. 4th. To obtain a cutaneous revulsion, by producing a superficial pain and a capillary hyperæmia equally superficial and transient."

Besides these, there are a number of other affections, differing much in their natures, in which the currents may be advantageously called into requisition. These more modern applications of electricity may be referred to four special indications, which we here attempt to specify:—

"1st. To cauterize parts, and thrust some caustic agent, as a platinum wire heated to a white heat by means of electricity, into organs or deep parts, to which we could not venture to apply ordinary caustic; or, still better, to replace the sharp instrument by cautery, effected by means of the same platinum wire heated to white heat by electricity.

"2d. To employ electricity as a chemical agent; for example, in coagulating the blood in an aneurismal tumor.

"3d. To determine the destruction or resolution of tumors of different kinds, by causing electric currents to penetrate into their substance by means of special electric apparatus.

"4th. To modify the vitality of affected organs by acting on them by some agency or other, not yet clearly defined; a course only explicable in connection with the details of cases."

Any one who is at all familiar with the phenomena of electricity and its effects upon the system must be aware that certain conditions and peculiarities exist in individuals occasionally, which should be taken into consideration as difficulties in the way of the administration of this potent agent. These are, according to M. Becquerel:—

> "1st. Nervous susceptibility, which may become a counter-indication to the administration of electric currents, and may force us to discontinue their use.
>
> "2d. Electric idiosyncrasy. When this idiosyncrasy and electric susceptibility are developed, there is almost always a counter-indication to the use of this agent.
>
> "3d. Old affections. It is important, when we are about to apply electricity to subjects who have been previously sufferers from such affections, to watch for the possibility of their return; and if this return occurs, or even threatens to occur, we must immediately renounce the use of electricity.
>
> "4th. When an individual presents himself with an affection to which electricity would be applicable, but is also suffering from some other acute or chronic disease, it must be accepted as a rule that there is a counter-indication to the use of this agent. We must wait for some time after the disappearance of the disease before applying it.
>
> "5th. Persistence of an organic lesion, which was the cause of the morbid phenomena, for the relief of which electricity has been used. Such cases are more frequent than is imagined, and constitute always a counter-indication to the use of electricity."

More than one hundred and seventy pages of the work are occupied in the discussion of the subject of Lesions of Movement, embracing loss or impairment of movement, to which is given the name of *Paralysis*, and the perversion or exaggeration of movement, which comprises *Convulsions and Contractions*. The author quotes largely from the experiments and observations of English authorities, especially from those of Dr. Marshall Hall. There is scarcely a morbid affection of the cerebro-spinal system on which paralysis may depend that does not receive from the able hands of M. Becquerel ample discussion on its pathology, treatment, etc. Then, too, we have a full investigation of those forms of paralysis which follow upon acute or chronic affections of the genito-urinary apparatus, and all the varieties of paralytic affections which seem to be symptomatic of the neuroses, or are associated with arthritic cases, or are indicative of general debility, or are symptomatic of some form of poisoning. Under this latter head we find diphtheritic paralysis, lead palsy, arsenical paralysis—indeed, all the forms of paralysis consequent upon the action of poisonous substances. The General Paralysis of the insane belongs to another division, which embraces also several other forms, difficult to classify.

In the work of Dr. Althaus,* the mode of action of electricity in paralysis was discussed so fully that M. Becquerel feels that he is doing him but justice in quoting the conclusions arrived at by him in answer to the question, *How is it that galvanism acts beneficially in paralytic diseases?* "Galvanism acts in paralysis," says Althaus, "by restoring the lost mobility to the molecules of the nerves and muscles, and by causing contraction of, and a more considerable supply of arterial blood to, the paralyzed muscles." This view the author considers hypothetical, and therefore unestablished.

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* Treatise on Medical Electricity, Theoretical and Practical, by J. Althaus, M.D. London, 1859.

The indications for treatment of paralysis by electricity, and the manner in which such treatment should be instituted, form an important feature in the work; but we must pass to other portions. Convulsions and contractions would seem to be affections which would contra-indicate the employment of an agent whose immediate effect is to produce an involuntary contraction, a decided convulsion of a special kind. Yet under certain conditions, and in certain varieties of convulsive action, special modes of application of galvanism are justifiable, as in those cases when the convulsions have continued longer than the primary cerebral and spinal lesions, which have been cured or have disappeared; or have persisted after relief from poisoning, as of strychnia, opium, etc.; or have constituted an important element of general neuroses, as hysteria, chorea, and epilepsy.

The author considers the best mode of prescribing electricity in some of these conditions to be by what he calls *médication hyposthénisante*, based on the fact that it is possible momentarily to deaden the normal mobility, or to paralyze the morbid contractility of a part, by particular modes of application of continuous or rapidly-intermittent currents. The author states the fact that this mode of medication has been attended with success, but we look in vain for an explanation of the precise *modus operandi* of its action, which gives it a superiority over other methods of applying electricity. Probably M. Becquerel, in this instance, may belong to the class of physicians to whom he refers in the latter part of the following sentence:—

> "Les expérimentateurs ont employé les uns une méthode perturbatrice, les autres une véritable médication substitive, *un certain nombre, enfin, une méthode dont ils ne cherchent pas a expliquer les effets, mais qui guérit.*"

M. Becquerel, to make his work as complete as possible, gives it considerably greater bulk than it would otherwise possess, by recording the fruitless efforts of credulous physicians to extend the powers of electricity to the cure of diseases in which it is wholly inapplicable. In this way the work loses, to a slight extent, in conciseness what it gains, perhaps, in completeness. In a book, which has no index, but merely, after the French fashion, a table of contents, this fullness, if we may so call it, is scarcely a virtue; in such *richesse* there arises an *embarras* which a copious index would relieve.

We are glad to see so comprehensive an abstract of the contents of two works on mental alienation, and the applicability of electricity to its palliation or cure, because that subject is not fully discussed in works on insanity, and the two quoted are inaccessible to the general public through any other channel than that which M. Becquerel's work affords.

The remaining chapters of the work, which, in addition to other subjects, contain all that is novel in the surgical applications of electricity, do not need a special notice here. They are in keeping with the whole book, devoted to the scientific explanation of all the indications for its employment, and clear in the description of the modes of making it useful. We feel that we are doing but justice to each author, when we say that the works of M. Becquerel and Dr. Althaus are the best that have recently appeared in France and England upon the interesting points upon which they treat, and, we regret to say, no American publication yet issued is deserving of a place in the same rank of excellence.

The most recent cisatlantic treatise is that of Dr. Garratt, of Boston, a handsome octavo, which, in its general appearance, does infinite credit to its publisher. The construction of the work is simple, the aim evidently being to have as few grand divisions as possible, though this arrangement necessitates a crowding together of an immense number of items under each head. The great fault of the book is, we think, the attempt to produce a cyclopedia of electricity, rather than a rational account of electro-therapeutics, such as would be embraced in a treatise.

The consequence is that Dr. Garratt has inserted numerous facts and descriptions which are unnecessary to the elucidation of the subject. He has introduced into a work intended for the practitioner, the first principles of electricity, the description of the simplest forms of battery, etc., as if his book were adapted for the simplest tyro in medicine; and, although we have had abundant opportunity of appreciating the fact that on these elementary points in chemical knowledge medical men are soon apt to become rusty, it is scarcely in a work professing to teach the advanced portions of electrical theories and modes of practice that they would seek for the means of reviving their chemical attainments. The first thirty pages, for example, might be omitted entirely, and the vacuum caused by their omission filled by something more eminently medical.

We have been struck more than once in Dr. Garratt's volume with the similitude of the language to that of other writers, and we might be tempted to employ what he himself styles "unnecessary and detracting criticism," did we not feel that the author's preface was deserving of consideration in extenuation of it. The author deems it scarcely necessary to state, "except to forestall unnecessary and detracting criticism, that he has unavoidably employed the ideas often, as also the language of others." After a long attempt to prove how difficult it is, in quoting from other authorities, to avoid using their own language, he states that "where quotations are made, they are duly acknowledged." Why not always quote *verbatim*, then, instead of laying one's self open to the charge of plagiarism by imitating words and expressions?

Chapter II., on the Early History of Medical Electricity, would scarcely please M. Becquerel; the French are not there shown to be the only nation of chemical *savans* who have ever done anything to assist the cause of electricity. German and English names are quite as numerous, and deserve quite as prominent a position as their Gallic neighbors. We do not recall at this moment any *Alexander* Dumas, as distinguished for chemical achievements; yet Dr. Garratt gravely tells us that one of that name, probably the ubiquitous and popular writer of *Les Trois Mousquetaires*, had "in some instances succeeded in decomposing calculi in the living human bladder." Certainly a *novel* application of electrical currents!

A work adapted for practitioners, as before remarked, ought to take for granted that the chemical basis upon which electro-therapeutics is founded is already laid, and yet, in the next chapter, it has been thought advisable to go back to the simplest construction of instruments in order to exhibit how well the complicated forms may act, when properly employed. In this section of the work, especially, much might have been, and ought to have been omitted, without in the least detracting from its general usefulness. The galvanometer, for instance, (p. 121,) is an ingenious apparatus; but of how much advantage is it to electro-therapeutists?

With equal propriety might the illustrations be curtailed; many are introduced with no very ostensible purpose. Dr. Garratt seems to have been bent upon teaching almost every department of medicine to the student, while exhibiting the action and uses of electricity. One would think, in cursorily glancing at some portions of the work, that the binder had accidentally bound up portions of Wilson's Anatomy with the elementary parts of a work on chemistry, the subject of electricity from a treatise on materia medica and therapeutics, and chapters from works on surgery, obstetrics, and dentistry. Mere anatomical plates, with apparently no direct connection with the text, puzzle the reader with inquiries as to the reasons for their introduction. Some of the illustrations seem inappropriate, to say the least; we hope they are more useful than they appear.

Many portions of Dr. Garratt's work are well written and clear, and contain much valuable information on electro-physiology and electro-therapeutics. The great defect of the work we consider to be its length, seven hundred pages being occupied in the discussion of matters which, with proper pruning, might be reduced to at least half that amount. If the author would, before issuing a second edition, consider the inappropriateness of introducing mere elementary subjects in chemical science into his book, and omit a large portion of the general pathology of diseases, he would make it a much more useful and quite as effective a treatise on medical electricity. A physician is supposed to know something about the pathology of the cases he wishes to treat before applying for information as to modes of cure, and, if ignorant of pathology, would assuredly not seek to be enlightened in a work on electro-therapeutics.

Nevertheless, even with these defects, we have cause to thank Dr. Garratt for his industry in collecting facts, his simple classification of them, and his efforts to produce a useful systematic treatise on the medical and surgical uses of electricity. In the words of the author, the object has been "to confine himself to gleaning from the highest practical authorities, and the comparing of these with his own clinical experiences, then classifying and arranging the subject-matter so as to present the whole range of electro-therapeutic practice on a more systematic and scientific basis." In this end we think he might have been more successful, had he adhered to this purpose throughout his work, and not adopted, a few lines farther on, a somewhat different aim, "success in practice, not theory."

ART. V.—*Du Laryngoscope et de son Emploi en Physiologie et en Médecine.* Par J. N. CZERMAK, M.D. 8vo., pp. 112. Paris, 1860.
On the Laryngoscope and its Employment in Physiology and Medicine.

ONE of the distinguishing features of the present day is the aid which the diagnosis of disease has received from mechanical appliances. The speculum, although dating back to the most flourishing period of Herculaneum, may be said to be, in the true sense of the term, a modern device, as far as its application is concerned to the elucidation of the nature and treatment of the disorders of the vagina and uterus. The anal speculum was but little employed thirty years ago, and of the application of the aural speculum hardly anything was known until the publication of Dr. Kramer's treatise on the diseases of the ear. Within the last few years a valuable addition has been made to our diagnostic armamentarium by the invention of the ophthalmoscope, and to a still more recent period we are indebted for the introduction of the laryngoscope and rhinoscope, whose uses in physiology and medicine the work whose title stands at the head of this article seeks to explain and elucidate.

Our author is Professor of Physiology in the University of Pesth, and it is quite apparent that he has made himself thoroughly acquainted with the larynx in its healthy and morbid relations. The work was originally issued at Leipsic, in 1860, was favorably reported upon by the Academy of Sciences and the Academy of Medicine of Paris, and was translated, during the author's sojourn in the French metropolis, by his friend, Dr. Mendl, having received important additions in its passage through the press, based upon observations made by Dr. Czermak, since the appearance of the German edition. It is accompanied by two plates illustrative of the manner of applying the laryngoscope and of the interior of the healthy larynx, and by thirty-one figures interspersed through the text, explanatory of instruments and various lesions of the larynx.

Dr. Czermak, in tracing the history of the laryngoscope, ascribes to the late Mr. Robert Liston the first idea of the application of an instrument to the diagnosis of the diseases of the larynx. In his Practical Surgery, published in 1840, the English surgeon, speaking of ulceration of the glottis, observes:—

> "A view of the parts may be sometimes obtained by means of a speculum; such a glass as is used by dentists on a long stalk, previously dipped in hot water, introduced with its reflecting surface downward, and carried well into the fauces."

In 1855, Garcia published in the London Philosophical Transactions and Journal of Science the results of a series of laryngoscopic researches upon the formation of the human voice. But these remarks and observations seemed to have attracted very little attention, and they were therefore soon forgotten. In 1857, however, Dr. Turck, Physician-in-Chief of the General Hospital of Vienna, became interested in the subject, and he accordingly examined a number of cases of diseases of the larynx with the speculum, the results of which he laid soon afterward before the Imperial Royal Medical Society of that city. The observations of Czermak were commenced in the same year, and were finally embodied in the present monograph, the most complete that has yet appeared upon the subject. In addition to these writers several others have appeared, as Semeleder, Neudoerfer, Stoerk, and Gerhardt, furnishing us with quite an extensive literature upon laryngoscopy.

The work of Czermak closes with an appendix, comprising communications from the Academy of Sciences and of the Academy of Medicine of Paris, respecting the priority of his claims over those of Dr. Turck to the practical application of the laryngoscope. From the facts therein detailed it may justly be assumed that our author is fully entitled to the entire credit of this matter, it being clearly proved that all the earlier publications of his Vienna rival date subsequent to his own.

The instruments necessary for making an examination of the parts constituting the larynx and trachea, are a speculum and a mirror, by means of which the structures of the pharynx and larynx are illuminated. The speculum consists of nothing more than a square polished steel mirror with rounded edges, the most suitable diameter of which is eight lines, by one line in thickness. It may, however, vary in diameter from five to fifteen lines. It has attached to one of its angles a rod about five inches long, and so flexible that it will admit of any curve. This rod is fitted to a handle and fastened by means of a screw. To prevent the mirror becoming dim by condensation of the expired air on its face, it should be heated to as high a degree as can be borne by the patient, by plunging it into hot water, or by holding its polished surface over the flame of a spirit-lamp.

The illuminating or reflecting mirror consists of a slightly concave glass, which in the instrument before us is three inches and a quarter in diameter, with a central perforation one quarter of an inch wide. It is fitted in a light metallic frame, which is freely movable upon a rod with two lateral branches. The rod is secured in a mouth piece, which is to be held between the molar teeth. M. Czermak prefers this form of mirror, although we may employ the frontal band of Kramer, consisting of a padded strap to pass around the head, and a cushion in front, which is to be placed over the eye of the observer, and to which the same form of mirror is attached. The light of the sun may be used as the source of illumination; but as it is not always possible to obtain this, we may substitute for it the flame of an argand lamp, or of gas, thrown upon the larynx speculum, and the illumination may be rendered more intense by concentrating the flame upon the concave reflecting mirror by means of a large bi-convex lens.

In making the examination, the lamp should be placed on a table to the right of, and a little behind the patient, so that the flame may be on a level with the roof of the mouth. The patient being seated on a chair, in front of the observer, places his hands upon his own knees, inclines the body forward, slightly extends the head, so as to make the neck more prominent, and, holding his mouth widely open, flattens his tongue, at the same time drawing it a little backward. The observer places his left hand on the shoulder of the person experimented upon, and fixes his neck and chin; or this hand may be used to control the tongue with a depressor. With the right hand he introduces the larynx speculum, holding the reflecting mirror between his teeth, and looking through the central perforation. The light and the position of the patient and observer having been properly regulated, the latter heats the speculum to the proper temperature, which he knows by touching it with his finger, and requests the patient alternately to take a deep inspiration and to pronounce the vowels *a*, *e*. At this time he endeavors to place the back of the instrument against the velum and uvula, raising these structures slightly and at the same time giving the proper inclination to the speculum, being careful not to touch the posterior wall of the pharynx. The speculum is then illuminated by the rays of light reflected from the large mirror, and throwing incident luminous rays upon the larynx, reflects the image of the parts into the eye of the observer.

As the structures of the larynx are seen upside down in the reflected image, beginners are advised to study laryngoscopy upon the cadaver or upon the excised larynx. When it is impossible to obtain the human subject, Dr. Stoerk recommends physicians to experiment upon the larynx of dogs, pigs, or sheep; but the author prefers the examination to be made upon the person of the observer. The whole apparatus is extremely simple, and with a little practice any one can soon learn to apply it.

Dr. Czermak also discusses rhinoscopy, or the examination of the nasal cavities with the speculum. As the subject, however, has not been elaborated, we content ourselves with simply mentioning the fact, hoping that some one else may soon direct special attention to it.

In conclusion, we trust that the little monograph of Dr. Czermak may be reproduced in this country in an English dress, satisfied that, from the interest and novelty of the subjects discussed in it, it would meet with many readers.

ART. VI.—*A Catalogue of the Pathological Cabinet of the New York Hospital, classified and arranged.* By ROBERT RAY, JR., M.D. 8vo., pp. 364. New York, 1860.

THIS work is a model of its kind, reflecting great credit upon its author. The collection which it describes is divided into eight sections: I. Bones. II. Joints and tendons. III. Digestive system. IV. Respiratory system. V. Circulatory system. VI. Nervous system and organs of the senses. VII. Genital and urinary system. VIII. Parasites. It embraces nearly one thousand specimens, put up in admirable style, well labeled, and fully described in the excellent catalogue before us, thus rendering reference at once easy and instructive. The value of such a collection can be properly appreciated only by those who are thirsting after a knowledge of morbid anatomy. New York has, indeed, much reason to be proud of it. We know of no similar collection of equal extent anywhere in the country.

The first steps toward its formation were taken in 1840, at the instance of Dr. John Watson, whose disinterested zeal in the cause of medical science, and whose great learning as a surgeon and a physician, reflect so much credit upon the profession of New York.

The catalogue is prefaced by a brief memoir of the author, the late Curator of the Museum, by his friend and early preceptor, Dr. Watson. From this we learn that Dr. Ray was born in the City of New York in 1832, that he was a zealous and enthusiastic student, that he received his medical degree at the College of Physicians and Surgeons in 1856, that he was one of the house surgeons of the New York Hospital, and subsequently a Dispensary physician, and that he died in July, 1860, meeting his fate with the composure and resignation of a Christian.

> "Dr. Ray," says his biographer, "had but little taste for the gayeties of society. He was rarely seen at places of fashionable resort. His hours of relaxation were mostly devoted to the family circle, or spent in friendly intercourse with a few familiar acquaintances. He had a cultivated taste for music, and performed with skill on the piano and violin."

ART. VII.—*On Diabetes and its Successful Treatment.* By JOHN M. CAMPLIN, M.D., F.L.S. 12mo., pp. 87. New York: S. S. & W. Wood, 1861.

THIS useful brochure, a reprint from the second London edition, originally appeared in 1858, as a republication of a paper from the Transactions of the Royal Medical and Chirurgical Society, and under its new garb is now brought to our notice, with additions having reference to the physiology of the organs concerned in this complicated disease, the value of iodine and pepsin in its treatment, and cases illustrative of its medical management.

Dr. Camplin devotes a few pages of this essay to the consideration of the pathology of diabetes, considering it as an affection in which the nervous system is more or less at fault, and the nervous power materially exhausted, and inferring that the brain and nervous system are primarily affected. He does not concur in the opinion of M. Bernard and other eminent physiologists, that the formation of sugar is alone referrable to the liver, but says:—

> "For many years I have been accustomed to consider the views of Dr. Prout on the pathology of diabetes as correct, with reference to the stomach and primæ viæ, and that the change of amylaceous matters into sugar takes place in that part of the system; and notwithstanding the recent researches, which give the glucogenic function to the liver, I am disposed to believe that in many cases the gastric juice may be so changed as to resemble the saliva in its properties, and that sugar may be absorbed independently of the liver."

Passing by the theories of the production of the disease, we come to the more important part of the work, and will briefly consider the juvantia and lædentia in diabetes, premising by stating that the observations of Dr. Camplin were made in the first place upon his own person, and that the successful management of his own case, as well as the experience of other physicians, have fully confirmed the soundness of the principles which he has laid down. The diet should be perfectly plain and nourishing, and all amylaceous articles be withheld. The patient should be invigorated with tonics, the action of the skin should be promoted, and the action of the liver and primæ viæ be regulated. Cold and damp are to be avoided, and in winter the patient should be warmly clad. All varieties of animal food and fish may be taken with impunity, as is the case also with milk and eggs. In regard to vegetables, onions, turnips, pickles, and lettuces properly dressed, are important. Young cabbage is considered by the author to be preferable to all other cruciferæ in the actually diabetic, and cauliflower sprouts, sea-kale, celery, mushrooms, beans, and endive will make a pleasing variety. As a beverage, good French brandy, claret, or Bordeaux wine are the best articles, all other wines and malt liquors being avoided. Tea will be found to be better than coffee, although the patient may take either. In persons disposed to obesity with a feeble circulation, animal food, with vegetables and fruits, should be used rather than the amylaceous articles; but fruits are, in general, not to be employed. Dr. Camplin places more confidence in bran cake than in all other articles of diet, and to show how efficaciously a diet of animal food, vegetables, and bran cake acts, we may state that the author suffered under a return of the disease from a change of diet, the urine being of high specific gravity and containing seventeen grains of sugar to the ounce. Four days after a return to the above diet, the urine was found to contain less than half a grain of sugar. Bran cakes being in every case a most important adjuvant, we give the formula for making them:—

"*Formula for Bran Cakes.*—Take a sufficient quantity (say a quart) of wheat bran, boil it in two successive waters for a quarter of an hour, each time straining it through a sieve, then wash it well with cold water (on the sieve) until the water runs off perfectly clear; squeeze the bran in a cloth as dry as you can, then spread it thinly on a dish, and place it in a slow oven; if put in at night, let it remain until the morning, when, if perfectly dry and crisp, it will be fit for grinding. The bran thus prepared must be ground in a fine mill, and sifted through a wire sieve of such fineness as to require the use of a brush to pass it through; that which remains in the sieve must be ground again, until it becomes quite soft and fine.* Take of this bran powder three ounces, (some patients use four ounces, the other ingredients as follows,) three new-laid eggs, one and a half (or two ounces if desired) of butter, and about half a pint of milk; mix the eggs with a little of the milk, and warm the butter with the other portion; then stir the whole well together, adding a little nutmeg and ginger, or any other agreeable spice. Bake in small tins, (pattipans,) which must be well buttered. in a rather quick oven, for about half an hour. The cakes, when baked, should be a little thicker than a captain's biscuit; they may be eaten with meat or cheese, for breakfast, dinner, and supper; at tea they require rather a free allowance of butter, or may be eaten with curd or any of the soft cheeses. * * *

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* This is particularly necessary in cases of irritable bowels.

"In some seasons of the year, or if the cake has not been well prepared, it changes more speedily than is convenient; this may be prevented by placing the cake before the fire for five or ten minutes every day."

There is no specific remedy for this disease, but Dr. Camplin has great confidence in the effervescing citrate of ammonia, in combination generally with nitrate of iron. Bitters and alkalies will be found serviceable in most cases, and cod-liver oil, when indicated, combined with wine of iron or infusion of quassia, may be administered. Opium may be given to check temporarily the flow of urine when unusually great, and in younger subjects the mineral acids, especially the nitro-muriatic, or hydrochloric in combination with iron, or the tincture of the chloride, will be useful. Every case, however, presenting certain modifications, the treatment must be varied in accordance with the constitution of the patient, or the organs concerned in the attack. Pepsin has not been extensively tried, but in some cases has produced remarkable effects. From the fact of iodine checking diuresis in horses, the iodides may prove serviceable in the human subject, and the iodide of iron will probably be the best form to employ.

Finally, the diabetic diet, consisting of the bran cake, milk, eggs, all kinds of animal food and fish, greens and other vegetables, to effect a cure or produce even temporary relief, must be persisted in, and the patient must not indulge in fruits or other amylaceous articles.

ART. VIII.—*Proceedings of the American Pharmaceutical Association.* 8vo., pp. 278. Philadelphia, 1860.

THIS volume, composed of the transactions of the American Pharmaceutical Association at the ninth annual meeting, held in the City of New York, September, 1860, contains, besides the address of the retiring president, a large number of reports, which are replete with interest and valuable information to the pharmaceutist, as well as to the practitioner of medicine. Among the volunteer papers, we have read with pleasure the very interesting memoir of the Hon. Henry Cavendish, by Henry F. Fisk, and regret that our limited space does not admit of our transcribing some of the leading points in the character and writings of that eccentric philosopher.

Original Communications.

I.—*On the Treatment of Rattlesnake Bites, with Experimental Criticisms upon the Various Remedies now in Use.* By S. Weir Mitchell, M.D.

The subject of the poisons made use of by certain animals has been in all times of the utmost interest to the popular mind. That it has failed to attract an equal or proportional amount of scientific investigation, can only be accounted for by supposing that the popular aversion to serpents, as well as the real danger which more or less surrounds the pursuit, have combined to deter toxicologists from engaging in such researches. The admirable effort in this direction made by the Abbé Fontana, who has left us the record of 3000 experiments on viper poisoning, may also have done something to prevent further study of this serpent, since his opinions have been reverentially received as final, and the multitude of his experiments has caused them to be looked upon as exhaustive of the subject.

In other than European countries, and where the more virulent poisonous snakes abound, observers have been wanting, or they have lacked those means of pursuing the study which only a great city affords. It has thus happened that, through want of material where observers were plenty, or lack of these where material was abundant, the knowledge of serpent venoms has advanced but little since the days of Fontana.

Before the time of that great toxicologist, viper venom had been studied by Charas, 1669, Redi, 1672 and 1675, and Mead, 1673. A multitude of others had also touched the subject, but, on the whole, they added nothing important to the information which came down from the Greek and Roman fathers of medicine; or, when they added anything, it took the shape of fanciful conjecture, and served only to make more difficult the task of unraveling the united web and woof of popular and scientific beliefs as to venomous serpents.

Without carefully reviewing this mass of strange opinions and superstitious conceptions, it is not possible to appreciate the service done by Fontana in clearing the ground for modern research and in setting at rest a host of minor absurdities. Most of the definite and novel views which he put forth as the direct results of his experiments have been more or less unsettled by various partial inquiries of more modern date: but, on the other hand, some of the most valuable facts which he discovered have never been questioned; and, as a whole, his essay, or series of essays, is still a monument of industry, ingeniously directed, and of experimental sagacity of the highest order.

From 1767, the date of his essays, no contributions of any moment were made to the toxicology of venoms until the publication of Russel on the Poisonous Serpents of India, in 1787.

In 1793 and 1799 appeared in this country Dr. Barton's Essays, which were rather records of his own thoughts and of popular and other opinions than of original research. In 1817, Mangili settled the question of the innocency of venom taken by the mouth; and in 1843, Prince Lucian Bonaparte analyzed the venom of the viper, and determined its albuminous nature. At various periods also appeared numerous papers by East Indian surgeons and European physicians on the therapeutics of snake bites; but, with trifling exceptions, no further experimental papers were produced until Drs. Brainard and Green recorded their researches in 1853. Dr. Brainard's separate Essay, 1854, contained interesting observations as to the phenomena of venom poisoning, but the main object of both the papers alluded to was the examination of the value of iodine used locally as an antidote. The tendency to regard the subject chiefly from a therapeutical point of view has indeed prevailed throughout nearly all of the researches, made either in this country, in India, or in Europe, so that if we omit the essays of Bonaparte, Mangili, Russell, and Davy, the work of Fontana still remains without a companion—no one since his time having examined any one serpent poison as to its chemistry, toxicology, and mode of formation. Yet, as every physician must concede, the treatment of snake bites can never be rationally understood until we retrace our steps and study anew and more profoundly the venom malady and its cause, in place of playing at perilous hap-hazard with its difficult therapeutics.

When I first engaged in the study of the venom of the rattlesnake, it was with the intention of ascertaining what value Bibron's antidote possessed. To effect this single end I procured four or five snakes from the Pennsylvania Alleghanies and proceeded to subject animals to their fangs, and afterward to give the supposed antidote.

After destroying many animals and attaining only negative results, I began to perceive that I was working in the dark, and that it was altogether impossible to obtain useful results without possessing definite knowledge as to the nature of the venom, the mode of its formation and ejection, and the whole natural history of the disease to which it gave rise.

The information which I desired was yet to be created. It existed in none of the books, and even so much of it as had been acquired by Fontana with regard to the viper, might not be true of the rattlesnake.

With a clear sense of these deficiencies in the present state of knowledge as to venom poisoning, I laid aside my experiments on remedies, only to resume them after the labors of two summers had removed from my path the impediments which have hitherto rendered the study of antidotes practically useless. The result of these researches is recorded at length in a paper recently published by the Smithsonian Institution, and to which I desire to refer the reader for full details of my experiments and for the conclusions to which they led me.* The principal difficulty which I encountered at the outset was the want of snakes; owing, however, to the ready and constant aid which I received from the Smithsonian Institution, I was enabled to secure a regular supply from the Virginia Alleghanies, and with these and such other chance supplies as I could purchase, or as were procured for me through the kindness of my friends, I was enabled to pursue my purpose with only such embarrassments as of necessity belong to the subject.

The practical difficulties which lay in the way of one studying the treatment of snake bites were among the most easily resolved of the many questions which multiplied in number and increased in perplexity as I advanced on this interesting path of study. In fact, I cannot but perceive that I have reopened a field of research which promises most valuable and strange results to the toxicologist, nor can I fail to comprehend that the whole subject of venom poisoning is to be reconstructed, and that on no branch of science are we so utterly ignorant as on this one. M. Bernard alone, of all the recent writers, seems to be aware of our lack of knowledge in this direction, and strongly urges a re-examination of the principal animal poisons, such as the venom of toads† and serpents.

At the close of the Smithsonian Essay, just referred to, I have given a brief statement of my views as to antidotes, and as to the great difficulties attendant upon their thorough study, and I have appended a short discussion of the relative value of the various remedial means now in repute for the treatment of snake bites, as well as my own opinion on the rational method of treating these injuries.

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* Researches upon the Venom of the Rattlesnake: with an Investigation of the Anatomy and Physiology of the Organs concerned, by S. Weir Mitchell, M.D., Lecturer on Physiology in the Philadelphia Medical Association. Jan. 1861. Washington: Smithsonian Institution. New York: D. Appleton & Co. Accepted for publication, July 1, 1860.

† Medical Times and Gazette, September 29th, 1860, p. 296. M. Bernard makes some interesting remarks on the venom of the toad. M. Gratiolet had already examined this subject and arrived at somewhat similar conclusions, to which, however, M. Bernard does not allude. See Gratiolet. Comptes Rendus, vol. xxxiv. p. 731, 1851.

The object of this present essay is to consider all the best-known antidotes by the light of the practical criticism of experiment, and, finally, to point out what means of treatment appear to me best calculated to relieve the sufferers from these dreaded accidents.

The course of study thus laid down will involve an examination of the following points, which I shall consider at such length as my space permits:—

1. Fallacies in regard to the use of antidotes of all kinds, arising from want of exact knowledge as to the secretion of venom, and the mode in which the serpent uses its fangs and ejects the poison.
2. Fallacies as to antidotes, arising from want of information on the natural history of the disease caused by the venom.
3. General considerations as to antidotes, and as to the mode of conducting researches in this direction so as to avoid errors.
4. Description of the phenomena of rattlesnake bites, analysis of symptoms, etc.
5. Local treatment. Experimental examination of the local medication most in repute.
6. General or constitutional treatment. Experimental examination of the principal constitutional remedies.
7. Sketch of the author's views as to treatment, local and general.

1. *Fallacies in regard to the use of antidotes of all kinds, arising from want of exact knowledge as to the secretion of venom, and the mode in which the serpent uses its fangs and ejects the poison.* When an antidote has been given, or any treatment used after a snake has bitten a man or a lower animal, it is usually taken for granted that the danger of any two bites is much the same if the subjects of the bites are alike in age or vigor. Now, even when the serpents are themselves of equal bulk and have at disposal drop for drop the same amount of venom, it may chance that the danger of the two bites is utterly unequal, and thus that in one an antidote might fail, and in the other appear to succeed. This arises from one of the following reasons:—

The snake fails to elevate its fangs sufficiently when striking, and the fang points touching the skin are driven backward toward their usual position of repose without penetrating the part aimed at. When this accident occurs, no wound is inflicted unless the teeth of the lower jaw bebecome entangled in the skin of the bitten part, in which case the small wounds thus made may be easily mistaken for fang marks. When experimenting with Bibron's antidote, in July, 1859, a large dog was secured and placed within reach of a snake which struck it fiercely and became fastened for a short time, so that I was able to perceive that the fangs were doubled backward, their anterior convexities resting against the skin to which the serpent was attached by the curved teeth of its lower jaw. The wounds made by these teeth were of course harmless, and the dog experienced no further inconvenience. This cause of failure in the bite must be difficult of detection, under ordinary circumstances, the snake being free, since it would be dangerous to approach closely, and since the snake is usually entangled for but a brief period. When, however, the serpents are held by the middle, in a leathern loop at the end of a staff, and thus allowed to bite, they not unfrequently fail to elevate the fangs sufficiently, and, as in experiments on antidotes, it is often necessary to secure the serpents in the manner described, the possibility of this occurrence should not be overlooked.

When the rattlesnake bites, whether it be at perfect freedom or not, both fangs do not always pierce the skin of the animal stricken. I have sometimes suspected that the serpent does not always elevate both fangs. This, however, is a point which does not readily admit of direct observation in snakes at liberty, and I can only add, that of seven dogs bitten by serpents at freedom, four had two fang marks, and three had but one. Now as the fang, duct, and gland of one side are quite distinct from those of the other, if only one fang be used, the dose of poison administered will be but one-half of that which would be injected were both fangs employed.

Apart from the possibility of the snake using only one fang at will, there are other facts in this connection which may enable us to explain the frequent occurrence of single fang marks. When, for example, the snake strikes obliquely at the flank of an animal, one fang sometimes remains out of reach of the part penetrated by the other, and this is the more apt to occur, because, in elevating the fang teeth, at the moment of attack, their extremities are made to diverge widely.* For a like reason, when the serpent strikes a small limb or member, it sometimes chances that the fangs either straddle the part completely, or that one fang entering it, the other passes it to one side without in any way injuring its tissues.

Besides these cases of single fang marks, many instances occur in which, although both fangs penetrate the opposing tissues, only one is in reality active, or, both entering the flesh, for reasons to be presently detailed a part, or perhaps in some cases the whole of the venom fails to be injected, and the danger of the wound is materially lessened.

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* The object of this seems to be to protect the lower jaw from injury in case the fangs miss their aim and are driven downward, in which case they would pierce the lower lip of the snake were it not that their divergence throws their points outside of it.

When the fangs in biting are fixed in the flesh, the lower jaw of the serpent is pressed upward against the part bitten, and at the same instant the temporal muscles, and especially the anterior temporal, compress the venom gland, and urge its accumulated venom along the duct and through the tooth. In most cases where both fangs have been used, the actions which bury the fangs more deeply, and inject the poison, are consentaneous on both sides; but sometimes a perceptible interval appears between the contraction of the right and left sets of muscles, so that a sudden motion of the bitten animal occasionally liberates one fang before its charge of venom has been duly delivered.

Still more curious, however, is it, that we may have both fangs deeply buried in the flesh of an animal, and yet not a drop of venom injected. The explanation of this source of fallacy in the use of remedial means is to be found in the following facts. Redi, in his researches on viper venom, published in 1675, states that the poison passes down alongside of the fang, and between it and the mucous cloak which covers it when at rest, and which is now known as the vagina dentis. Fontana disproved this statement, showing that the venom passes out through the canal of the fang. If, as I presume is the case, the arrangement of which I shall presently speak belongs to the viper as well as the rattlesnake, both were right and both were wrong. Professor Christopher Johnston, of Baltimore, and Professor Jeffries Wyman have both of them recently described the venom duct of the rattlesnake as ending in a papilla, which projects *into* the basal aperture at the base of the fang. Upon close inspection it can be seen that no tissues connect these two parts together in any direct manner, the end of the duct being held in close contact with the fang by the gum, which envelops the tooth, and through which the extremity of the duct passes. When the fang is couched, at rest, in its mucous sheath, the apposition of the fang and duct is still kept up, but is less perfect than when the fang is erect, since then the mucous cloak is thrown off the anterior convexity of the fang, and gathering in firm folds at the base of the tooth, firmly presses the papillary end of the duct into the lower orifice of the fang.

Such being the case, it can be seen that if the fang is not fully erected, or if, from any cause, the end of the duct is separated from the fang opening, a part or the whole of the venom may escape between the fang and its mucous cloak, and fall innocuous on the skin of the bitten animal. In a modified form this result often happens, and a part at least of the poison is cast on the skin, the larger portion traversing the duct, and probably the excess alone being wasted. In direct experiments on animals I have often noted the escape of venom alongside of the fang, and in general, the more the serpent's motions are interfered with during the experiment, the more likely is it that the whole or a part of the poison will be lost in the way I have mentioned. It thus happens that the most vigorous serpent may become innocent at the very moment of the bite, and that not even the most watchful attention will enable the observer to say that the remedy given was the cause of a bite proving mild in its effects. As I have here urged, this, like other sources of fallacy, is most apt to appear when the serpent is held, and when thus we endeavor to cause the bite to occur in a particular part of the body of an animal.

2. *Fallacies as to the value of antidotes, arising from want of information in regard to the natural history of the disease caused by the venom of serpents.* There exists an idea, not confined to the popular mind, that the bite of the rattlesnake is an extremely fatal accident. Although we have no full statistics which are available to settle the matter, I have gathered enough information from various sources to enable me to assert with great confidence that it is far less fatal than has been supposed. When making this statement, I do not mean to be understood as saying that the rattlesnake is not a dangerous animal, but only that neither man nor dog need be regarded as condemned to death when wounded by it, whether remedial means are afterward employed or not. A large rattlesnake long restrained from biting will use his weapons no doubt with deadly effect, and hence, when showmen have been bitten, they have rarely escaped. On the other hand, the greater number of such accidents, arising from serpents at freedom, will be apt to prove serious in their results, but not very often fatal. Of fifty-seven cases of rattlesnake bites which are given in full or merely mentioned in the journals, only five died; and even if we make every allowance for the character of the reports, this evidence still remains sufficiently strong; nor have I found that it lost force in the presence of such facts as my experiments on animals have brought before me. A close analysis of the table of cases in my Smithsonian essay, (p. 100,) with reference to the treatment and the result, brings us to the conclusion either that all treatment (oil, alcohol, iodine, ammonia, etc.) is successful, or else that the greater part of the cases must have survived under any form of medication. It can be shown, moreover, that most of the plans of treatment employed are utterly useless.

Here, then, is a malady from which at least seven-eighths of the patients recover. The mere fact of their surviving can assuredly be no test of the value of a plan of treatment. Yet, that this or that case did not die *has* been thus construed, and this cardinal error exists in almost all of the earlier examinations of antidotes, and in some of the later ones.

Authors who have reported successful cases of the treatment of snake bites by various means, have been further misled by a want of knowledge as to the duration of cases not treated at all, and as to the character of the recovery. A general survey of a number of cases, and a careful study of animals bitten and not treated, can alone supply this lack of information as to the average natural history of cases undisturbed by any therapeutic resorts. As the result of such study, we learn that a few cases of rattlesnake bite die, that a few linger long ere recovery is complete, and that the larger proportion get well, and that with a degree of suddenness which is sufficiently surprising, considered with reference to the serious character of the symptoms, and well calculated to deceive the credulous therapeutist.

In many cases this abrupt departure of all serious symptoms is most remarkable; a man is bitten, thought to be dying, treated this or that way, and on horseback or at work within forty-eight hours from the time of the bite. In dogs bitten, alike result obtains, and the recovery after the most urgent symptoms is usually rapid and complete.

Now nothing is more gratifying to the physician than the sudden effect of his remedies; and the speedy and favorable change of a case from an appearance of extreme danger to one of relief and convalescence, naturally leads him to attribute that result to his medication, which really was natural to the malady. A fuller acquaintance with the disease must annihilate this source of error for any but the most incautious minds.

3. It will now be fitting to consider the third section of our subject, and to comprehend clearly how we may avoid the sources of fallacy above pointed out, and *how the study of antidotes to serpent poison should be conducted.*

And first, what is an antidote? The popular mind usually conceives of it as a remedy having power to neutralize directly in the system a given poison, destroying its potency by acting upon it chemically or otherwise, in some more mysterious way. It is possible that agents of this kind may exist, but thus far we are ignorant of any possessing such a relation to the venom of the rattlesnake. The pretensions of remedies supposed to be so gifted may be easily settled by mingling them with the venom, and afterward injecting the mixture into the tissues of an animal.

The more rational conception of an antidote, is of an agent which merely counteracts the effects of the poison, and which may have no chemical influence on the poison itself. Such an antidote may enjoy no power to affect the toxic activity of venom when mixed with it, and yet may prove to be an active constitutional preservative against its effects. Just this position seems to be held by one of the supposed antidotes most in repute.

So far as I am aware, no great difficulty is likely to arise in the study of antidotes, owing to their nature as such, for, although some of those most in esteem, such as Bibron's antidote (bromine) and the Tanjore pill, (arsenic,) are poisonous in a high degree, it is easy to learn how much may be given with impunity. Hence, although in one or two instances observers have actually and plainly destroyed animals with the very agents which were designed to relieve them, it is not probable that errors of this kind will be perpetuated, or even occur so often as to bring into disrepute any really useful remedy. The mode in which the study of antidotes and local remedies should be conducted, so as to avoid all the fallacies to which I have alluded above, will now claim our attention.

Opportunities of studying the use of remedies, local and general, in connection with cases of venom poisoning in man, are of course more or less rare, and it is scarcely possible to eliminate or allow for the varied fallacies which surround with difficulty this method of studying the subject. Owing to this, and to the comparative ease with which the means of study may be created in animals, it is preferable to employ these, and to use only such treatment in human cases as may appear to promise enough of success to justify its usage.

The larger the animal employed the better will it be for the purpose, since the symptoms are more easily studied in large animals, and since they are less likely to be injured by active antidotes. Almost all toxicologists who have investigated this subject, have been content to submit animals, as dogs, etc., to be bitten by the serpents themselves. We have seen, however, that when this course is followed, a number of fallacies interfere to prevent the observer from drawing satisfactory conclusions, and although great care and thorough acquaintance with the anatomy and habits of the serpent may enable us to overcome this difficulty in part, some portion of the obstacles in question are in the nature of things unavoidable. In my own researches I have sought to escape from these embarrassments: first, by a careful study of the natural history of venom poisoning in dogs and other animals; second, by injecting into the animal experimented upon known quantities of venom previously removed from the ducts of active serpents. The venom to be thus employed is secured in the following manner: A serpent is seized by the middle, with a leathern loop at the end of a staff; then the neck is caught and held down on a table with a notched stick, while a tube an inch and a half in diameter, and holding a sponge soaked in chloroform, is slipped over the snake's head, and by a dexterous motion carried downward so as to include one-third of the length of the serpent, the notched stick being at the same time removed. About twenty minutes are required to stupefy the snake. It is then seized by the neck, and the edge of a saucer slipped under the upper jaw, so as to elevate the fangs. This is done by an assistant while the operator with his right thumb and forefinger strips forward the glands and ducts on both sides. The yellow venom runs out through the fang and alongside of this weapon. A known amount of this fluid may then be injected into the tissues of an animal, the instrument employed being a minute trocar and syringe. It may be objected to this method of using the venom, that it is supposed by many persons that the poison is less fatal when used artificially than when injected by the snake. Of this, however, there is no adequate proof, and I have seen nothing to induce me to believe that it is at all correct. On the other hand, the advantages arising from the artificial use of the venom are manifold and obvious, and it is only essential to know what amount of venom is certain to destroy a dog if no remedial agency intervenes. If, in addition to this, the observer is thoroughly cognizant of the ordinary phenomena of the venom disease, he will possess all the reasonable means of insuring accuracy, which are now attainable. Antidotes may then be used internally, in one of two ways to be hereafter illustrated, or mingled with the venom, and injected where this mode of study is to be desired.

Before stating my experiments upon the plans of treatment now or recently in repute, it will be proper to give the reader certain necessary information as to the nature of venom poisoning, the forms it affects, and the symptoms which characterize its varieties. These details must of necessity be brief, and the reader who wishes more complete information is referred to the author's previous paper.

The venom of the rattlesnake is a yellow, albuminous fluid, of an acid reaction, of a sp. gr. of 1044, and coagulable at a temperature of 140° to 160°. Its toxic activity is unaffected, or but slightly affected by boiling, and not at all by freezing. Acids and alkalies, alcohol, etc. do not destroy its virulence, and when dried it retains its dreaded power for an unlimited period of time. Closer qualitative analysis discovers in it at least two albuminous substances: one coagulable by boiling, either when alone or diluted with water, and also by alcohol; the other, also albuminoid, coagulable by alcohol only, and constituting the active element of venom. This latter agent I have described as *crotaline*.

Effects of venom on man and animals.—When an animal receives in any way a dose of venom, one of two things happens. If the animal is small, or at all events if relatively to the size of the animal the amount of venom injected is large, the animal dies very suddenly, acutely poisoned. If, on the other hand, the dose of venom is relatively small, the animal suffers to some extent with the symptoms of acute poisoning, and then passes into what I shall term the stage of chronic or secondary poisoning, which may endure for an indefinite period, and end in death or recovery. Acute poisoning in man is rare,* and is more and more common the smaller the bulk of the animal bitten, until we arrive at cold-blooded creatures, in whom this sudden ending is the exception, and great prolongation of the malady (*i.e.* secondary or chronic poisoning) the rule. In dogs I have rarely seen the very rapid death I speak of; but it is not uncommon where the serpents are large and active and their venom abundant.

Let it be clearly understood then, that when man or animal is poisoned by venom, a set of symptoms occur which wind up with death, or, being prolonged, pass into others of a somewhat different nature, constituting the chronic cases, or those which survive long enough to exhibit the signs which characterize the secondary poisoning.

When, for example, a pigeon is bitten, or receives in any way three or four drops of venom, it walks a few steps, crouches, gasps for breath, rolls over, and is dead in a few minutes, convulsed or not in the moment of agony. So sudden and speedy is this ending in some cases, that the pigeon may die within a minute. The only additional symptoms which we can perceive are the rapidly quickened and enfeebled motions of the heart, and sometimes vomiting and evacuations from the cloaca. In larger animals the same symptoms take place, but the vomiting is more common and the expression of general debility more perceptible.

Men who have been bitten describe their symptoms as much the same in kind, but, as before stated, they rarely end in death in this stage at least; the power of resistance acquired by increased bulk being, I presume, the chief protective agency. In some cases the more formidable signs of prostration do not declare themselves before some minutes or even half an hour has passed. In one case a man engaged in splitting wood was bitten; he picked up a stick and pursued the snake a few feet, when suddenly he became sick at the stomach, complained of deadly nausea and general weakness, reeled a few steps farther, and fell on the ground. In another instance, the sufferer walked briskly for twenty minutes before the symptoms of debility became very well marked.

It becomes important to our purpose to decide the cause of these symptoms and what organs are affected. All authors agree in speaking of the condition as one of debility, and all describe the pale face and cold sweats, the hurried breath and quick and feeble pulse. If we examine an animal dying rapidly with these symptoms, we find absolutely no lesions—the blood and the tissues are alike healthy in appearance—both to the naked and assisted eye. A series of experiments, the relation of which would be misplaced here, has shown that the heart does really become enfeebled, and that the arterial pressure is singularly diminished; and this appears to be a direct effect on the arterial system, since it is impossible long to sustain life by artificial respiration; at the same time the nerve centres are attacked, and the respiratory movements failing on this account, become jerking and labored; the sensory and motor nerves seeming still to preserve their functional integrity. Such, in general terms, I suppose to be the causation of death in these cases. Far different are the symptoms which arise for study when the patient survives the stage of acute poisoning. The duration of this stage it is indeed difficult to define; this only we know, that after a time the debility continuing, as shown by vomiting and syncope, the blood becomes affected in a marked and singular manner, while the relations of tissue and fluid are so altered that passive hemorrhages take place; jaundice occurs, and a variety of symptoms declare themselves as this or that organ becomes diseased and the seat of congestion and ecchymosis. Meanwhile the local symptoms assume an importance which they do not possess in the acute stage, and may even become of paramount influence in deciding the fate of the patient.

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* Though rare, not impossible; men have died from this cause within twenty minutes of the time of the bite, although no such cases are on record in the journals, and are only known to me by personal information.

If then the patient die very early, there are symptoms of weakness alone, and there are no perceptible lesions of blood or tissue; supposing life to be prolonged, the early symptoms continue, while signs of blood poisoning appear in addition, and lesions closely resembling those of yellow fever are found post-mortem. If, again, the patient successfully resists the secondary evils here described, he may still perish from the results of the local injury, which increases in danger and importance as the case progresses.

To make this matter clear we will now examine more accurately the various symptoms and the character of the wound.

Wound.—The wound is usually described as very painful, but so far as my own experience informs me it is not always so in animals, nor do all men who are bitten speak of it as painful at first. Indeed, the wound has sometimes been for awhile disregarded, and at all events the hooked form of the fang, the forcible injection, and the sudden withdrawal of the weapon, account sufficiently for the pain, without supposing it to be specific. The succeeding local symptoms are rarely notable when the patient dies within half an hour, except that in animals the muscles twitch most violently, of which we hear nothing in the human cases. As the case advances, the part swells, becomes discolored and increasingly painful, and these changes extend up the limb involved, and, reaching the trunk, swell and bloat one side, or the whole body.

This swelling is not inflammatory, but arises from the gradual effusion of blood, which has lost power to coagulate, and which therefore extends from the broken vessels, at the seat of the wound. The later swelling is also due more to œdema than inflammation, although it seems probable that in man the tendency to inflammation under venom poisoning is greater than in the lower animals. In dogs bitten, the local swelling is sometimes slight, sometimes enormous, and when cut into is found to depend on a collection of blood, either fluid or semi-coagulated. The pain which accompanies the swelling is excruciating in many cases, and does not lessen until the part becomes vesicated, loses heat and falls into gangrene In man this process destroys the skin only, or the whole of a limb, but in dogs I have seen no such extensive sloughs, and the skin often escapes, so that we find only a small opening, and beneath it a cavity containing the débris of broken-down tissues, mixed with pus. I suspect that in man the swelling would occur less rapidly were it not for the constant use of the ligature about or above the wounded part. If the case be a serious one, the early constitutional signs of prostration continue; occasional vomiting, or at least nausea, is present, frequent syncope occurs, and the pulse continues weak and rapid. In general the bowels are constipated, unless the case be greatly prolonged, when diarrhœa may take place as a sequel. The mind is, in most instances, clear up to the time of death, or at all events it is only confused, excited, or subject to sensory delusions, while convulsions seem to be of extreme rarity in any period of the malady in man. The fall of temperature in the skin is usually described as an early symptom of the general weakness, but no accurate thermometric observations have been made in human cases. The duration of cases of rattlesnake bite is very various, although both in dogs and men the recoveries are often rapid and unexpected.

As it is impossible for me to dwell in full detail upon the symptoms of the venom malady, and equally impossible to describe the great variety of lesions which may occur, I have thought best to state three typical cases of poisoning in animals, and two in men. The following are quoted in full from the essay so often referred to:—

"*Experiment.*—The dog, a small terrier weighing about fifteen pounds, was intended to make one of a set of observations on the value of Bibron's antidote. For this purpose he was placed in the snake-box, where instantly he was struck twice by a large snake, both wounds being double fang marks, and both being in the right flank. On removing him I observed that from one of the wounds blood was running in a thin stream. After it had run for some time, I caught a few drops in a watch-glass, and found that it coagulated well. Before I thought fit to use the supposed antidote, I was called away. Returning at the end of an hour I found the dog standing with his head pendent, having just vomited glairy mucus. His pulse was quick and feeble, his respiration occasionally panting. The hemorrhage had ceased. Owing to an accident which at this time deprived me of the supply of Bibron's antidote, which I had prepared, I was unable to employ the animal in the manner proposed, and not desiring to lose the observation altogether, I made use of the opportunity in the following way:—

"One hour and a half after he was bitten I drew a drachm of blood from the jugular vein. It clotted perfectly.

"Four and a half hours after the bite a drachm of blood from the same vein coagulated equally well.

"Twenty hours from the time of the poisoning, the dog was found lying on his left side, having passed slimy and bloody stools in abundance. At intervals he seemed to suffer much from tenesmus, but was so weak that he stood up with difficulty. His gums were bleeding, a symptom I had seen before, and his eyes were deeply injected. At this time about two or three drachms of blood were drawn. It was very dark, and formed within five minutes a clot of feeble texture.

"Twenty-seven hours and a half after the time at which he was bitten, the dog was weaker. His hind legs were twitching, and the dysentery continued. Three drachms of blood were drawn as usual, but no clot formed in this specimen although it was set aside and carefully watched for some time. While I was collecting the fluid for observation the dog suddenly discharged per anum at least four ounces of dark, grumous blood. At this time I supplied the dog with water, and left him. Fifty-four hours after the bite he was seen again, and found to have drunk freely of water, and to have passed fewer stools. Up to this date he declined all food.

"From this time he improved rapidly, and took with eagerness whatever nutriment was offered. On the fourth day his blood again exhibited a clot, although it was very small and of loose texture. I made no further examinations of the blood. The dog lost flesh as he gained strength, and had profuse suppuration from an abscess in the bitten flank. At the close of two weeks he was active and well, except that the wound was still open.

"The case last related is doubly valuable, as pointing out even in a single instance the time at which the blood became altered, and also as showing, once more, how profound may be this change, and how perfect the recovery.

"*Experiment.*—A dog of mongrel bull-terrier breed, weighing thirty-one pounds, was lowered into the cage, where he was struck on the outside of the right hind leg in the thigh. He drew up the leg when released, and whined for a few minutes. The wound, which was a double fang mark, bled a drop or two, and the muscles about it twitched considerably at intervals for an hour, when this symptom was obscured by the swelling. His pulse, which was naturally about 145 and irregular, was, at the fifth minute, 140 and regular, respiration 35. At the fifteenth minute he lay down, much weakened, pulse 160 and feeble, respiration 40. At the twentieth minute the bowels moved loosely, with a gray discharge, and there seemed to be some tenesmus in the rectum. Twenty-fifth minute, pupils so far natural and mobile; he could stand when urged, but lay down again at once, and was much weaker. Forty-fifth minute, pulse 160, respiration 45 and laborious. Fifty-fifth minute, loss of power in the hind legs. Eightieth minute, respiration quick and labored, and so irregular as to make it impossible longer to count the heart pulses. The eyes were natural, and followed my motions; and he wagged his tail when fondled. At this time the observation was temporarily interrupted, and, on its resumption at the third hour, the dog was found dead. He had no foam about his mouth, and probably died quietly.

"*Post-mortem section.*—The whole muscular and areolar tissue of the leg and thigh, half way up and down the limb, was dark with infiltrated blood. About the wound the swelling was due to a mass of blood partially coagulated. The extravasated blood extended through the limb, and on the inside it passed half way up the sartorius and adductors, and along the sheath of the vessels to within two inches of the femoral ring. Nearly an inch of the sheath was clear of it, but one-half inch below the ring the tissues were shaded with blood, and the same appearance was seen around the ring itself. From this point the extravasation extended under the peritoneum, into the pelvis, and on to the inner face of the ilium. The color of the tissues thus stained was a brilliant scarlet. The abdominal viscera were healthy, except that the mucous membrane of the lower bowels was somewhat congested. The lungs were sound. The heart was relaxed, the right side full, the left nearly empty. The blood on the right side was a little darker than that on the left; on both sides and everywhere else it was perfectly fluid and free from clots. Placed in a phial, it remained fluid until decomposition ensued. Two hours after death, some of the blood globules found in the heart were slightly indented; those taken from the small vessels of the ear were perfectly normal. At the period of examination, the muscular and nervous irritability had entirely departed."

A third observation on a smaller animal, and also drawn from a like source, will answer my present purpose.

"*Experiment.*—In this instance the animal, a rabbit, was struck once in the back by a large snake already exhausted by frequent use. A few minutes after the bite took place, the rabbit was seized with weakness, gritting of the teeth, and rapid respiration. It passed urine and feces, and remained feeble during some hours. From this period the weakness abated somewhat, but the back continued to swell. On the second day the local signs were improving, but the animal had passed a very albuminous urine, and a large amount of blood mixed with feces. The symptoms of general weakness now increased, the hind legs began to drag, the motions were uncertain, and the bloody purging grew worse. The rabbit died on the third day, during my absence.

"*Post-mortem section.*—Rigor well developed. The period of death being uncertain, the irritability of the tissues was not tested. The wound was surrounded by half an ounce or more of dark fluid blood. The vessels in the neighborhood were full of a similar fluid, but there was no vascular redness, like that of acute inflammation. The muscles in the track of the bite, which was a double fang mark, were remarkably softened and could be torn with the utmost ease. The brain was highly congested, and there was a good deal of bloody serum in the cavities of that organ. Similar congestion existed in the spinal canal, and at several points the white nervous tissue was stained with small patches of blood. The lungs were healthy. The pericardium was curiously distended with bloody serum. The heart was contracted and contained but little blood, and that dark and diffluent. The intestines were spotted at intervals with ecchymoses four to five lines in diameter and apparently just beneath the serous covering, the cavity of which contained a little bloody serum. The intestines from the œsophagus to the rectum were dotted with ecchymoses and filled, especially the large gut, with blood and mucus. The right kidney was large and absolutely soaked with dark fluid blood. The left kidney was more healthy. The bladder and ureters contained a good deal of bloody urine. How the rabbit lived so long with such a singular complication of serious lesions it is difficult to conceive. In most cases of chronic poisoning, some one or two organs may become the seat of local extravasations, but for extent and character of lesion this case stands alone in my experience."

The accounts given by our own authors of the cases of human poisoning are extremely meagre and unsatisfactory—the best reports being those by Sir E. Home* and M. Pihorel,† both of whom described cases which took place in showmen.

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* Engl. Phil. Trans. at large, 1810, p. 75.

† Journ. de Phys. Exp. et Pathol., vol. viii. p. 97.

Dr. Horner's* case is perhaps one of the best among our own reports, but like the more curious one given by Sigaud,† the patient was not altogether a healthy subject. I shall quote Dr. Horner's case with the statement that the local symptoms were better illustrated in the second case quoted, that by Dr. R. Harlan.‡

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* Am Journ. Med. Sci., vol. viii. 397, 1831.

† Du Climat et des Maladies de Brésil, p. 394, contains the following account of the singular case above mentioned, a case so curious in every point of view that I have been tempted to add a translation of it.

"According to a popular idea in divers parts of America the bite of the rattlesnake cures the leprosy (lèpre léontine of Alibert) without injury to the patient. Many facts would seem to show that lepers have been bitten without fatal results, not only by the coraline viper, by the jararacasu, but even by the rattlesnake. Among these facts may be cited those which have been collected by Dr. Jacintho Pereira Reis, and by the deputy, Estevaõ Rafael de Carvalho. The first is that of a leper of the district of Rio-das-Velhas, in the province of Minas-Geraes, who having been bitten by a rattlesnake, was cured of his disease in fifteen days. The second is furnished by a negro slave of the province of Maranhaó, who recovered from his leprosy in a very short time after having been bitten. M. de Lima assures us that being one day in the town of Saint Charles, province of Carabobo, in Colombia, he observed a man whose face was covered with a single large cicatrix, which at first he attributed to a burn, but on inquiry learned that it was the result of a radical cure of a case of leprosy, by the bite of the rattlesnake. The same observer tells us that an opinion favorable to this means of cure is entertained throughout the district of Caracas and Apure, where leprosy is common. These statements which, after all, are but hearsay, induced a leper to resort to this fearful mode of relief. According to Dr. Jacintho Rodrigues Pereira Reis, another leper had already made this experiment in this capital, (Rio de Janeiro.) This person had the courage to allow himself to be bitten at one time by the coraline viper, and at another by the jararaca preguicosa. Each time he was left for dead, but notwithstanding, gradually revived without aid. After this he still had the pain to observe that his original malady continued its fearful progress.

"*Case.*—Marianno Jose Machado, born at Rio Pardo, province of Rio-Grande do Sud, aged fifty, had been for six years afflicted with tubercular lepra. During four years he had resided at the leper hospital, at Rio de Janeiro. On the third of September, he came out, resolute to put to the test the bite of the rattlesnake, despite the prudent and wise counsels of divers physicians, who saw in the means he desired to employ a more than dubious chance of success, and who also were aware that the patient had not exhausted all the more available and proper remedies. The patient finally resorted to the house of M. Santas, a surgeon, Rue de Vallongo, No. 61, who possessed a rattlesnake." After describing the appearance and character of the leprosy, and mentioning those who were present, M. Sigaud continues as follows:—

"Marianno Jose Machado, before proceeding, declared that he acted on his own responsibility, and then having signed a paper to this effect, put his hand into the

‡ North Amer. Med. and Surg. Journ., xi. 227, 1831.

"Adam Lake, aged about forty, a robust, muscular man, acting in a laborious capacity, and who, from his own account, was in the habit of

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cage and twice seized the serpent. The reptile at first fled, and finally licked his hand, but, feeling itself pinched with force, turned and bit him at the metacarpal articulation of the little finger and ring finger. The bite took place at 10 minutes of 12, September 4th. The patient did not feel the bite, and only knew of it by the remarks of those around him. His hand was a little swollen, but painless, and bled somewhat, the pulse and respiration remaining normal. Five minutes later, he experienced a slight sensation of cold in the hand, with a little pain in the palm, which, in a few minutes, increased considerably. 17th minute, pain in the wrist. 20th minute, hand swelling. 30th m., pulse stronger and fuller, mind tranquil. 55th m., sensation of swelling in sides and back of neck; size of hand increasing; pain extends to two-thirds of the forearm. 59th m., general numbness. 1 hour and 20 minutes, general tremor; hyperæsthesia. 1 h. 36 m., mind troubled, pulse more frequent; difficulty in moving the lips; tendency to sleep: choking sensation; intense pain in the hand and whole arm; hand swelling. 1 h. 45 m., pain in tongue and pharynx, extending to the stomach; increased pain and swelling in the bitten hand; feet cold. 2 h. 5 m., difficulty of speech, and a little later, difficulty of swallowing; anxiety; copious sweating on the chest. 3 h., weakness; nose bleeding; inquietude; pulse 96. 3 h. 4 m., general sweat, and a little after, involuntary groans; pulse 100; great pain in the arm; face injected; continual epistaxis. 3 h. 35 m., the patient swallows wine and water readily, and changes his shirt; a red color is seen throughout the body, and a little blood leaks out of one of the pustules under the arm; the color deepens, especially in the bitten limb; atrocious pains are felt incessantly in the arms: the throat seems to be narrowed, and the breathing becomes difficult. At 4 h. 30 m., pulse 104; salivation; great heat of body. 5 h. 30 m., pulse 104; torpor; urine abundant; saliva thick; muscular weakness; groans from excessive pain; respiration tranquil; pulse full; increased swelling of the bitten hand. 7 h., somnolence; awaking, complains of great pain in the chest, and of a sense of constriction in the throat; free and full urinations: deglutition more difficult; saliva abundant; continued epistaxis; entire inability to swallow. 8 h., inquietude; copious urination. 9 h. 15 m., profound sleep. 10 h., patient took three teaspoonfuls of infusion of guaco; refusing sugar and water which were also offered; the epistaxis now ceased; pulse 108, regular; the leprous tubercles on the face and arms are a little depressed, and have an erysipelatous look. 10 h. 20 m., made two ounces of clear urine; better; sleep for a few moments; pain in the chest lessened, and pain is now felt in the legs and feet, which with the bitten hand are still cold; pulse 108, regular; thirst; the patient drinks water; sitting up with facility. At 11 h., takes four spoonfuls of strong infusion of guaco. 11 h. 45 m., urinated a colored urine; continues to drink without trouble; pulse 119; arm and hand much inflamed, with excessive pain. 12 h., sleep; excitement; urination. 12 h. 30 m., sleep; anxious face; cries of pain; the patient demands the last offices of his church, and refuses remedies. Rather later, emission of urine; great heat in the limbs; the patient takes two doses of the remedy at successive half hours; symptoms as before. 14 h., sits up twice, to drink water; the difficulty of swallowing augmenting. 14 h. 13 m., takes the remedy; sleeps; pulse 110. 15 h. 30 m., micturates; sleeps. 15 h. 45 m., takes a dose of the remedy; involuntary movements of the right hand and left leg. 16 h.

drinking from half a pint to a pint of alcoholic liquors daily; on Friday, July 1, 1831, was in a crowd collected at Fisher's tavern, in Kensington, to witness a popular exhibition of rattlesnakes, confined in a cage. Lake being somewhat intoxicated, opened the door of the cage, and allowed one of the animals to creep out and ascend his bare arm; as it was going up, he caught the animal somewhat abruptly by the neck, it immediately struck at him, and inflicted two small wounds. In the evening, he felt some itching about the bend of his arm, and he rubbed it accordingly, without thinking of the snake. The itching increasing, he was induced to examine the part, and there he found a little red spot. The recollection of the rattlesnake then occurred to him, and he began to bathe the part in salt water. This not relieving him, he called upon Dr. Elkinton, at which time the whole extremity was swollen to nearly double its size, and was very painful. Dr. Elkinton applied a dry cup over the part which had originally itched, and was bitten; it was near the cephalic vein at the bend of the arm; scarified cupping was also done in three or four places in the same region, and some ounces of blood were extracted by a repetition of the cups; the forearm was also rubbed with the terebinthinate tincture of cantharides, which produced vesication. In the course of the evening, some doses of spirit of hartshorn were administered, and also some tablespoonfuls of the expressed juice of plantain, (*alisma plantago,*) and hoarhound, (*marubium vulgare.*)

"The next morning (July 2, 1831,) the patient was brought to the almshouse, about half-past eight o'clock. He had vomited in the conveyance. He was sensible, and stated that the scarifications had bled much during the night; they were then bleeding freely. The arm, from the shoulder and front of the thorax to the fingers, was swollen to twice its natural size, and was very painful when moved. His pulse was almost imperceptible and thread-like, his extremities cold, he was disposed to cramp in the legs, and his debility very great. His respiration was natural and easy. His eyes were muddy and heavy; his face was somewhat bloated.

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45 m., takes a spoonful of the remedy; repose; pulse 100; two emissions of urine during 17th and 18th hours; respiration being easy. 21 h. 45 m., great prostration; convulsive movements of jaw and lower extremities; bloody urine. 22 h., pulse quickened and absent at long intervals; increase of convulsive movements; diminution of swelling of extremities and of the dark color of the skin; deglutition very difficult; breathing labored; blisters were applied to the thighs, and the infusion of guaco given. 22 h. 50., convulsive; motionless; an injection of brandy given. 22 h. 55 m., convulsions stopped. 23 h., same condition; an ounce of oil of lézard given by the mouth; was taken with great difficulty. Death, at 23 h. 30 m. The corpse became livid, and swelled considerably in a few hours, being mottled with violet-colored spots. The odor was such, next day, as to forbid an examination post-mortem."

Feeling the desire to go to stool, he was assisted from his bed for that purpose, but was seized, while on his way, with a general spasm, without foaming at the mouth; being laid down on the floor of the ward, it went off in a few minutes, and he there had an involuntary evacuation from the bowels, of a dark bilious color. This occurred before I saw him. He received from the resident physician five grains of ammonia and an ounce and a half ol. olivarum.

"Sinapisms were also applied to his ankles and breast; he was directed to take liquor volat ammoniæ, ʒj; sp. vin. dilut. ℥ss, every two hours, and intermediately use ol. olivarum, ℥j; of the former prescription, he took two doses before he died, and one of the oil. Another application of cups over the old scarified parts was made, and the hemorrhage from them diminished. The extremity was then enveloped in cloths, dipped into ice water.

"The symptoms continued stationary till 11½ A.M., he then complained of violent pain in the course of the colon, and, on taking his last dose of medicine, he said he felt sleepy, closed his eyes, and in a few minutes died without agony or convulsion.

"*Dr. Harlan's case.*—On Monday, the 13th of September, 1830, Daniel Steel, a showman of living animals, in this city, was severely bitten by a large male rattlesnake, immediately below and on the metacarpal joint of the index finger of the left hand; the accident occurred about four o'clock P.M., on a warm day, while he incautiously seized the reptile by the neck, not so close to the head but that the animal was able to turn upon him. Immediately after the bite, the blood flowed freely from both the fang punctures; the parts in the immediate vicinity of the punctures became tumid and livid, notwithstanding the efforts of the patient at suction with his mouth—which faintness obliged him soon to relinquish. On my arrival, about half an hour after the accident, I found him extremely pale and faint, and was informed that he had fainted several times, the whole of the back of the hand was puffy and tumid, with infused non-coagulated blood, which appeared to have infiltrated from the vessels and forced its way through the cellular tissue; a ligature had been previously applied on the wrist; another was now placed on the arm, the forearm having already commenced swelling.

"The situation of the wound rendered the use of cups inapplicable, and the flow of blood was so rapid as to make their application inexpedient. The punctures were separated some distance from each other, which rendered it requisite to excise two large portions of integument; the excisions extending down to the tendinous fascia; the blood, which flowed freely after the operation, did not appear disposed to coagulate; cold water was now poured on the wounds in a continued stream, from the mouth of a pitcher, held at a considerable elevation, and the swollen parts in the vicinity of the wounds were forcibly pressed, in order to expel the effused blood. The patient again became very faint, and was laid in a recumbent posture. The wounds were next washed with spirit of hartshorn, several doses of which were administered internally; but being now informed that the patient had drunk freely of sweet oil, the hartshorn was omitted, until the stomach should be evacuated by drinking warm water. A poultice of bread and water was next applied, to encourage the bleeding, and the patient was put to bed. At ten o'clock P.M., I was sent for in haste; the patient was thought, by attendants, to be dying. The bleeding of the wounds had been extensive, the tumefaction had extended up to the arm, the inner and inferior portions of which were discolored by effused blood; the patient vomited incessantly; he complained of insatiable thirst, and drank cold water every few minutes; he had pain and stricture at the pit of the stomach, great restlessness and anxiety, cold skin, with the exception of the wounded arm, which was very painful; add to which, there existed delirium, singultus, difficulty of breathing, and pulse at the wrist scarcely perceptible. The poultice, bandages, and all ligatures were immediately removed; the back of the hand was blacker and more swollen, and the skin of the forearm was hot and tense. As a substitute for the poultice, and in order to suppress the bleeding, which appeared to endanger the life of the patient by the debility it occasioned, large flat pieces of fresh meat, were bound on the wounds, hand, and forearm. Before this operation was completed, the patient exclaimed, 'That feels comfortable.' The indications arising from the present symptoms, were: 1. To allay irritation and thirst. 2. To arrest the vomiting. 3. To procure sleep, if possible. 4. To excite the sanguineous system to resist the depressing power of the poison, which had so emphatically manifested itself on the system in general.

"A mustard plaster was directed to be applied to the pit of the stomach; sixty drops of laudanum to be administered every half hour, until the vomiting should be arrested; after which the following bolus, to be taken every two hours until sleep should be induced: ℞ pulv. opii, six grains; pulv. gum. camph., eighteen grains; pulv. carb. ammonia, thirty grains. M. ft. in three boluses. Sig. as directed. Of these pills he took three before the effects desired were manifested. On the morning of the second day, his pulse was raised; the extreme thirst and irritability of the stomach were allayed, and reaction of the system in several respects was manifested; but the tumefaction of the arm had extended to the shoulder, with broad black streaks up to the axilla; stricture at the breast and great local pain were now the chief complaints. The application of raw meat was renewed, as it afforded comfort to the patient, and appeared to reduce the swelling of the hand, and by pressure, had nearly suppressed the hemorrhage. In order to allay the pain and tension of the whole arm, he was directed to expose it naked to the *fumes of burnt wool*, in a convenient apparatus, which was attended by such marked alleviation of symptoms, that the patient himself was desirous to have the operation frequently repeated, and continued for two or three days; the swelling always diminishing after each application; it caused the arm to perspire profusely, and covered it with blackish soot impregnated with ammonia, resulting from the decomposition of the wool. During the intervals, the arm was rubbed with volatile liniment. The raw meat having become offensive from its disposition to ferment and putrefy, was omitted, and flaxseed poultices substituted; the anodyne boluses were continued in half doses through the day, and the quantity increased at night to produce sleep. The system again became depressed and appeared to struggle with the effects of the poison; as the patient had been somewhat addicted to intemperance, he was allowed milk-punch to support his strength. On the third day, a greater degree of reaction was obvious; the bowels were evacuated by castor-oil; the dose of the anodyne was diminished, and by carefully nursing the arm, in less than a week suppuration supervened, and the patient was able to leave his bed."

It is much to be regretted that physicians in this country should have paid so little attention to the venom malady as only to report cases in which they supposed themselves to have been successful. Hence is it that no good history of the disease can be made out from their statements, and hence it is that post-mortem examinations of the lesions are almost unknown—there being only three on record, of which two took place in Europe. The reader need not be surprised then at the small amount of accurate knowledge of symptoms placed at the author's disposal: fortunately the ability to create the disease in animals enables us in some measure to fill up this gap.

The information now in possession of the reader will enable him, I trust, to follow the remarks upon the use of remedies. A number of these, whether local or constitutional, may be readily dismissed, either because their value or want of value is plain, or else because former observers have settled their therapeutic position in some conclusive manner.

In treating of this matter, I have been obliged to deny notice to a host of herbs which enjoy repute in small sections of our country, and which, in turn, have once possessed and lost a wider reputation. The reader who calls to mind what has here been said as to the many fallacies which surround the observer, will not fail to perceive in the accounts of these remedies given by authors the reason of their apparent success and ultimate loss of favor.

Local Therapeutics.—Following the classification adopted in my essay, we may divide the various local means of treatment into four classes:—

1. Agents which remove the poison and the poisoned part, as excision and amputation.

2. Means which partially remove the venom, or more or less detain it in the injured part, as scarification, ligature, suction, and caustics.

3. Agents, which being applied to the wounded part, or injected into it, are supposed to destroy the venom, or render it in some way innocuous, as injections of iodine.

4. Local usage by inunction or otherwise, of various substances, such as alcohol, indigo, ammonia, olive oil, simple warm or cold poultices, water dressings, etc.

Excision, or amputation of a small part or member, has been occasionally resorted to, the former by Dr. Harlan, the latter in a successful case which took place in France soon after M. Pihorel's case. Dr. Harlan's patient was extremely ill, but recovered.

Class 1st. The experiments of Fontana on viper poisoning have shown conclusively that immediate excision or amputation of the part bitten will save the life of an animal which must otherwise have died, and however swiftly the poison may pass into the circulation, it does certainly seem clear that in a severe case the removal by these decisive means of even a part of the venom might favorably determine the balanced chances. The question of resort to these ultimate surgical means in cases of poisoning in man, is one involving many considerations. Thus, where it is known or probable that the serpent was a large one, and where both fangs entered, and where the early symptoms were grave, free excision, or even amputation—of a finger, for instance—would be justifiable. While on the other hand, where the reverse of these circumstances is met with, or information as to the size of the snake, etc. is lacking, it would be well to remember how few fatal cases occur, and to accept for the patient the chances of a less heroic local treatment. It should also be recollected that the value of ablation lessens as we recede from the time of the original injury, unless the circulation has been arrested by ligature or cups immediately after the infliction of the wound. The means just discussed depend for their use on certain very simple considerations, and require at our hands no experimental questioning.

In class 2d we have, first, scarification or incision, which, like ablation, is of some use if done early, and is justifiable later in the case because it is so much more mild a resort. When used at all, the track of the fang wounds should be opened by the knife, and the part afterward exhausted of blood, and as far as may be of venom, by the use of suction, cups, or pressure. Caustics are more doubtful remedies in these cases than has been supposed. Potassa, soda, ammonia, and the undiluted mineral acids affect very little the toxic activity of the venom when mixed with it for a time, unless heat is also employed in addition. The actual cautery is more efficient, as it destroys both venom and tissues, and is more likely to be within reach. Like all the other local means, it is less useful as time advances. It has been but little used in this country.

Ligatures, suction, cups.—One of the oldest remedies in snake bites is the ligature, the simplest, most ready, and for a time the most effective means. Whenever the bite is on an extremity, a cord or handkerchief should be tied tightly about the limb, as near to the wound as possible. After a time, the swelling will necessitate its removal, when a second ligature should be placed on the part, a little higher up, and this ready means of quarantining the poison should in no case be abandoned until such necessary local treatment as seems requisite shall have been instituted, and the proper constitutional remedies employed. If it is possible, as it sometimes is, to use both the cupping-glass and the ligature, it will of course be best to do so; but cups alone can be employed in certain localities, and in some, as the nose, neither of the means at present under review can be made available, and suction by the mouth of a bystander may be the only resort; unless preceded by incision, or unless the fang mark is large enough to bleed spontaneously, this latter means is not likely to be of much service in removing the venom.

Intermittent ligature.—Ligation obtains for the patient a reprieve, of which the physician may make excellent use. A period arrives, however, when the local swelling threatens gangrene, and the band being then of necessity loosened, the venom rapidly overwhelms the system. Are there no means of securing the advantages of the ligature, without subjecting the sufferer to all the inconveniences of its employment, as commonly advised?

About twenty years ago two physicians of Charleston, South Carolina, Drs. Holbrook and Ogier, used the ligature in a way which was then novel. They loosened the band for a few minutes at a time, and then tightened it again, as the system began to show signs of feebleness. By this means, patiently followed out, they succeeded in admitting to the general circulation such small doses of the poison at any one time as to diminish materially the ultimate danger of the bite in the animals which they employed.* Dr. Alexander,† (1855,) in a short but very sensible essay advised a like use of the ligature, and urged also that alcoholic stimulants should be given before relaxing the ligature, and afterward in such quantities and at such intervals as may seem desirable. So far as I am aware Drs. Ogier and Holbrook first experimented on this use of the ligature, and Dr. Alexander first advocated it in print, and reported cases of its use in man in combination with the internal administration of stimulants. Dr. Alexander relates the following case in illustration of his views.

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* These experiments were made, as Dr. Holbrook informs me, by one of his pupils, superintended by Dr. Ogier. They have never yet been published.

† St. Louis Med. and Surg. Journ., vol. xiii. p. 116, 1855.

The bite was in a child, near the tendo achillis. The limb was corded below the knee, and whisky being freely given, profound intoxication followed its use. "Regarding this as an indication of safety, I announced to the parents, at the end of sixteen hours from the reception of the bite, that the child was out of danger, and directed the removal of the cord. At this time there was intense swelling and commencing vesication below the cord, but not a trace of poison above it. Immediately after the removal of the cord the swelling advanced up the limb, as it had done previous to its arrest by the cord ; the poison reached the trunk, as could be perceived by the swollen condition of that side of the body when compared with the other, and in two hours after the announcement of my joyful prognosis the heart ceased to beat. My patient was dead."

Dr. Alexander's further remarks, which fully represent the author's views, are as follows: "Thus instructed by this unfortunate case, I never afterward administered alcoholic stimulus until I was ready to remove the cord, which should not be done for four or six hours, or at least until the cups have effected all that they can accomplish. It should then be merely loosened, and the whisky or brandy given, so as to keep the pulse natural or full. And I would here observe that intoxication should be avoided on account of the debility which it induces; a moderate exhilaration is all that is necessary. In one or two hours more I loosen the cord still further, continuing the use of the spirits, and thus by admitting the poison into the circulation gradually, I counteract its influence more successfully than if I were to allow the whole amount of poison that the veins were capable of absorbing, to assail the heart at once."

Class 3d, of local remedies, consists of various substances such as alcohol, olive oil, ammonia, indigo, and the numberless herb infusions, poultices, raw meat dressings, etc., which at different periods have found favor in this or other countries.

If alcohol and ammonia have any value, it is purely as local stimulants. The advantages of alcoholic agents used internally, and the supposed value of ammonia similarly employed, have led, however, to the idea that they would prove specifically useful as local antidotes. As we shall see in future, the utility of stimulants taken by the mouth depends less upon their meeting the poison and neutralizing it than upon their power to counteract its physiological effects on the heart and nerve centres, and perhaps also on the blood. Moreover, the following direct experiments prove with sufficient clearness that these agents in no way directly destroy the toxic activity of venom.

Experiment.—Two drops of venom and ten drops of alcohol were left in contact for ten minutes, and then injected into the breast of a pigeon. It died in 71 minutes.

Experiment.—Two drops of venom and twelve of alcohol were left in contact for half an hour, and then thrown under the skin of a pigeon. It died in 62 minutes.

Experiment.—Three drops of venom and forty of alcohol were mingled, and after twenty minutes injected under the dorsal skin of a rabbit. It died in 37 minutes.

Six similar experiments ended in the same way, all the animals—three pigeons and three rabbits—dying within various periods. As test experiments, I injected small amounts of alcohol into animals of these same species, but except more or less stupefaction, observed no serious effect. In another series, two or three drops of venom were placed in a drachm of alcohol and the alcohol afterward evaporated slowly. The poison which remained was then slightly diluted with water, and injected as usual; but in each case with the ordinary fatal effect. Under these circumstances, it is plain that if, when directly mixed with venom, alcohol does not destroy its activity, it is little likely to do so when merely placed upon the wound. The experiments with ammonia as a local antidote, were made in the same way and with like results. Only one difference was perceptible: the local extravasation and swelling were not so well marked when alcohol and venom were injected together, as when venom alone was thus employed; while in regard to ammonia, I could not perceive this modification of the local phenomena. Inunction with oil was once a favorite remedial means, and was studied by Fontana with reference to viper venom, and by him pronounced useless. I have made no experiments upon its employment, nor do I suppose that any physician is likely at present to displace for it more potent and plainly indicated remedies.

The remaining local resorts enumerated above may equally be dismissed with the briefest notice. Poultices of various kinds, meat dressings, etc. are probably of some value in the later stages of the local treatment, where such applications are usually needed to aid in softening and removing gangrenous parts. I have not considered them as worthy of serious attention under any other point of view; and the same may be said of a multitude of herb applications of which Dr. B. S. Barton gives a long list, and to which the credulity of sixty years has added considerably.

Most of these have been used internally and externally at the same time, and have enjoyed a reputation which can only be explained by reference to the general considerations in regard to constitutional remedies which have already been urged upon the attention of the reader.

Class 4th, *injection of iodine in solution.*—In 1853, Dr. David Brainard, of Chicago, in conjunction with Dr. Green,* proposed the sub-cuticular injection of an iodized solution of iodide of potassium as a local antidote in rattlesnake bites. He further desired to extend this treatment so as to include poisoning by woorara, which he believed owed its toxic power to a serpent venom, an opinion general at that time, but now no longer held.

Dr. Brainard's process is as follows: Ten grains of iodine and thirty grains of iodide of potassium are dissolved in an ounce of water. The bitten part is first cupped, or a ligature is placed on the limb, until the tissues are so swollen with serum as to allow of the injection passing readily through the distended areolar spaces. A small trocar and canula is then pushed laterally into the bitten part, so as to reach the site of the wound, and the injection effected by screwing to the trocar a small syringe charged with the iodine, and so filling the part by pressing down the piston of the syringe while the cupping-glass remains over the wound and exhaustion is kept up with its aid. Apart from the antidotal value of this ingenious means, it is clear that the necessary apparatus is rarely at hand, and that cups of various curves, to fit the equally various surfaces of the body, as advised by Dr. Brainard, are not likely to come into general use in localities where the rattlesnake is found.

Before passing to the practical examination of this remedy, it is proper to state that Dr. Brainard describes it as a direct antidote enjoying the power to neutralize the venom. He adds:—

"My experiments were commenced with the venom of the rattlesnake, and made principally on pigeons, dogs, and cats. Birds die from it sooner than quadrupeds, and are therefore much more difficult to save by treatment. The way of using the serpent is, to have it confined in a groove, with only the head projecting. Denude the breast of the pigeon of its feathers, and when the fangs are raised in anger, press it against them. I prefer this method to that of extracting the venom and inoculating it, for two reasons:—

"First. The poison, when extracted, is uncertain in its operation, being often composed in part of saliva, and sometimes wholly of that fluid.

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* Comptes Rendus de l'Academie des Sciences, 1853, p. 811. Brainard and Green. See also an 8vo. pamphlet, Chicago, 1854, by Dr. Brainard; and Smithsonian Reports, 1854.

Fontana constantly found that the wounds made by inoculating the venom were less dangerous than the bite of the viper.

"Second. The bite is the wound we are called upon to treat, and is placed in circumstances less favorable than a wound by inoculation."

One-half of the pigeons bitten and thus treated, died. The serpent employed was the *crotalophorus tergeminus*,* or prairie rattlesnake.

The method of using the serpent, described by Dr. Brainard, is open to objections already stated. The presumed mixture of the venom with saliva could scarcely occur, as the duct of the venom gland serves for it alone, and under no circumstances is it mixed with saliva unless the two fluids accidentally meet in the serpent's mouth. It is certainly true that Fontana found inoculation less effectual than the bite, but it is to be remembered that he in nowise imitated the mechanism of the bite when inoculating,† so that it is hardly fair to compare the results of the two processes. A fine trocar and syringe enables us to simulate the fang, and yet to use known quantities of venom. With these few remarks, we will pass at once to the experimental mode of criticism. It was clear that if animals bitten could be saved by subsequent injection of venom, and if iodine possessed the power of neutralizing the venom, a mixture of iodine with the venom ought to render it altogether innocuous when injected. At the same time we should thus escape from the numerous fallacies which embarrass all the other modes of study in which the antidote is used *after* the injury has been inflicted.

Experiment.—About six drops of venom were divided into equal parts. One-half was injected into the breast of a pigeon, which fell in 6 minutes, and in 80 died convulsed. The remaining half was mixed with 30 drops of the iodine antidote, and after 3 minutes the whole was thrown into the breast of a pigeon. At the close of 90 minutes the pigeon was crouching and very feeble; 27 hours later it appeared well. The local swelling was solid and not large, nor did it afterward slough or suppurate.

Experiment.—About 15 drops of venom were divided into three portions. Five drops injected into the breast of a pigeon killed it in 6½ minutes.

Experiment.—Five drops of venom were mixed with 10 drops of the iodine solution, and, after 1 minute, injected into the breast of a pigeon. Death took place in 32 minutes with convulsions

Experiment.—Five drops of the same venom were mingled with 1 drachm of iodine solution, and, after 3 minutes, the mixture was injected as usual into the breast of a pigeon. At the 12th minute general convulsions took place; and death followed at the 17th minute.

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* Or, more properly, Crotalus tergeminus.

† His inoculations were made on the surface of wounds, or by pushing the venom into incisions previously made.

Experiment.—About 12 drops of venom from one snake were separated into two parts. About one-half was treated with 1 drachm of iodine solution. At the end of 6 minutes the mixture was injected into a pigeon's breast. At the 4th minute the pigeon fell—death occurring at the close of 85 minutes.

Experiment.—Three and a half drops of venom and 35 drops of iodine solution having remained in contact 23 minutes, were injected into the thigh of a pigeon. At the 5th minute it fell, and died without convulsions at the 20th minute.

Experiment.—Three and a half drops of venom were mixed with one drachm of iodine solution, and after 43 minutes the whole was injected into the thigh and breast of a pigeon. In 20 minutes it fell, and died in 73 minutes, not convulsed.

A series of five experiments of like nature was made on pigeons, using for each case 3 drops of venom and 25 of iodine solution. No. 1 died in 24 m.; No. 2 and No. 3, in 18 m.; No. 4, in 95 m.; and No. 5, in 127 m. In a comparative series where no iodine was used with the venom, No. 1 died in 7 m.; No. 2, in 16 m.; No. 3, in 23 m.; No. 4, in 49 m.; and No. 5, in 71 m.

A comparison of these results and a reference to the above stated experiments, suffice to show that while iodine seemed to retard the constitutional action of the venom, it did not annul that action. I am therefore unable to confirm Professor Brainard's views. If it be urged that I did not use cups in addition to the antidote, I would reply that my desire was to test the value of this antidote apart from any interfering aid, such as cups, whose utility we already comprehend. If, moreover, the cups were used by Dr. Brainard only to detain the venom in the part, and so secure to the antidote the chance of meeting it, this is needless where the venom and iodine are mixed before using them.

There remains for examination another fact of great value, first observed by Dr. Brainard. In all the cases in which Dr. Brainard injected iodine into the site of the fang wound, he found a remarkable absence of the usual local phenomena, such as swelling, ecchymosis, hemorrhage, etc., and he explained this deficiency by supposing that the venom was altered specifically by the antidote, and had thus lost its power to produce either its local or general effects. So far as the absence of the usual local signs is concerned, I can fully corroborate this statement. If venom alone be injected in one case, and venom and iodine in another, the difference between the two wounds will be such as to impress the most casual observer—the one being black, swollen, and dripping with blood; the other showing slight change of color from the iodine, but not otherwise altered.

The question now arises, is the altered character of the wound due to the influence of iodine on the venom, or to its effects on the tissues? To settle this point, I added the iodine solution as usual to portions of venom, and then exposed them to a gentle heat for two or three hours, hoping to drive off the iodine. In this I was but partially successful; only a part was thus lost, and, at all events, the iodide of potassium still remained. Thus prepared, the venom was injected. The local signs which followed were much more marked than before, and led me to suppose that if I could entirely dissipate the iodine, I should restore to the wound its original character. It would have been possible to separate the venom and the antidote by following the process of M. Reynoso,* whose admirable experimental criticism upon iodine as an antidote to woorara is a model of such research. This means, however, involved exposure of the venom to other chemical agents, and the end in view was attainable by simpler means.

After observing the local influence of iodine, I was led to employ simple astringent agents in the hope of finding that they possessed equally with this substance the power of modifying the local action of venom. A series of experiments was therefore instituted, using tannic acid in place of iodine. On mixing this agent with venom and injecting the mixture, I found that the local effects of the wound were equally well counteracted, and that, so far as lessening the danger of the wound was concerned, tannic acid answered as well as iodine. Pursuing the matter still further, I treated the venom with tannic acid in excess, and then added ammonia until the previous precipitate was redissolved. The whole mixture was next injected, and the animals were found to die as usual with signs of local and constitutional poisoning. It was also observed that although these agents affected the local phenomena, the usual signs of blood poisoning took place when the animals lived long enough to allow of this occurring. From these data, I drew the general inference that both iodine and tannic acid delay the action of the venom, by affecting the tissues rather than the venom.

Notwithstanding this conclusion, there remains the unmistakable fact that these agents so modify the local phenomena as to lessen the ultimate danger, and that, moreover, unlike caustics, their use does not involve any loss of tissue, so that they are conservative of the part, and in so far valuable and available where circumstances admit of their employment. In a practical point of view, it is of little moment whether they effect this desirable result by action on the venom or the tissues.

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* Comptes Rendus, xxxix. 67, and xl. 118, 825, 1153.

In Dr. Brainard's experiments, pigeons were employed, and, in following him, I have naturally used them also. Death took place, however, so invariably when I used full doses of venom, that I could obtain but one chance of observing whether the wound continued to preserve a normal appearance, or whether in spite of this, the secondary local results, such as gangrene, etc., would occur. To satisfy myself as to this, I made the following experiments:—

Experiment.—A rabbit received in his flank one-half drop of venom, mixed with 18 of iodine solution. He became feeble in 10 minutes, but rallied, and finally recovered; at the 30th hour he was killed with woorara, and the wound examined. The tissues about the wound were a little gray, and shrunken, but not otherwise changed, and there was no effusion of the black blood, such as usually gives peculiarity to the wounds made by the venom alone.

Experiment.—Three drops of venom and sixty of iodine solution were injected into the lower part of the thigh of a dog, weighing twenty-nine pounds. The animal was ill for several hours, with feeble pulse, labored respiration and vomiting; next day he was well, but without appetite. He was killed by pithing, and the wound examined. The muscles were a little altered in color, by the iodine; but except in one locality—about two inches from the trocar wound—there was no ecchymosed appearance, and even in this spot it was trivial.

It usually happens in dogs bitten, that, on recovering, the locality of the wound forms an abscess, filled with bloody pus, and the débris of neighboring tissues, but not involving any considerable loss of skin. In two additional cases of dogs wounded with a mixture of venom and iodine solution, the dogs recovered, and the local appearances being watched with care, it was found that in one case only a little serous oozing took place, and in the other no secondary results could be observed. On the whole, therefore, the evidence is strongly in favor of the ability of iodine to diminish the local evils caused by venom, and, in so far, to lessen the general danger. If, too, a mixture of iodine and venom gives this as a result, it may be perfectly possible to modify a previous wound by the subsequent infiltration of neighboring tissues with iodine or tannic acid, and for this nothing can be more effectual than the mechanical means proposed by Dr. Brainard.

Constitutional remedies.—When defining the various fallacies which are to be avoided in studying the comparative value of remedies addressed to the cure of rattlesnake bites, I took occasion to define what was meant by an antidote, and so to correct the popular error, which limits its use to such substances as really neutralize the poison, whereas the derivation and actual meaning of the word more truly express the position of most remedies which possess any claim to the title, they being rather counteractive agents than anything more direct. Thus aconite enfeebles the heart, alcohol stimulates it, and is thus a physiological antidote to its effects.

A number of substances have at one or another period enjoyed the celebrity of being direct antidotes to venom, and even alcohol, which is certainly of use in these cases, has commonly been regarded as owing its value to some mysterious ability to neutralize the poison.

The remedies still in vogue as internal antidotes are ammonia, olive oil, cedron, guaco, arsenic, Bibron's antidote, (bromine,) and alcoholic stimulants. In studying these substances it will be proper to determine first, whether they directly neutralize, or rather alter the venom itself; and secondly, what power they possess when given internally. The first end may be attained by mixing the venom with an excess of the antidote, and injecting the mixture: if the venom acts us usual, the supposed antidote must be presumed to have no immediate influence on the venom.

The second method of study by the internal exhibition of the remedy will inform us as to whether it has the ability to counteract the effects of the venom. It may be pursued in two ways, by giving the antidote first, or by giving the antidote after the venom has been employed. Finally, it is absolutely necessary to give the venom in known amount by artificial subcuticular injection, rather than to trust to the uncertain plan of subjecting the animal used to the bite of a serpent.

Ammonia.—The volatile alkali, proposed by Jussieu in 1747, was closely studied by Fontana, who came to the conclusion that it was altogether valueless as a remedy in viper bite, whether used on the wound or internally, or in both ways at once. His experiments are open to criticism from the fact that he does not state how much ammonia he gave, or what effects it produced. On the whole, however, he makes out a strong case as against its antidotal value; but not even his high authority has prevented its frequent use, since his time, in India, Europe, and America. In our own country especially it has been regarded with much favor, and has received the support of numerous cases of rattlesnake bite ending happily under its use.* To know that a thousand cases of coryza got well after taking cubebs, gives us no strong conception of its saving power when once we learn that coryza does not kill; and in like manner when it becomes known that rattlesnake bites are really less fatal than they were once thought to be, we come to regard reports of their successful treatment, and limited mortality under this or that treatment, with some reasonable caution and reserve. To this fallacy, however, I have already alluded; it is well illustrated in most of the reports favorable to the use of ammonia. I have already shown, p. 294, that ammonia does not modify or affect at all the toxic activity of venom; when mingled with it and injected, the animals die as usual. If it has any value, it must be as a counter-active agent, and this, at first sight, seems not unlikely, when we recollect the symptoms of weakness which belong to cases of venom poisoning, and when we consider that ammonia is a stimulant.

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* Drake, West. Jour. Med. Phy. Sci., vol. i. p. 60; Miller, A. G., Boston Med. and Surg. Jour., vol. viii. p. 246, 1833; Moore, J., Am. Jour. Med. Sci., vol. i. p. 344, 1827.

It is scarcely requisite to give in detail the experiments upon the internal use of ammonia. Upon giving it to dogs which had been bitten, or to others into whose tissues I had injected venom, I failed to observe any marked stimulating effect, so completely was the remedy overmastered by the malady. In one case I believe that I actually destroyed a dog with the means which was meant to save him. On the whole, then, from my own results and those of Fontana and others, I am inclined to believe that the volatile alkali possesses no power over these injuries which does not belong in a far higher degree to other stimuli, which are usually more accessible.*

Olive oil has been used internally, both for viper bites and for those of the rattlesnake, and no remedy has been more favorably considered. The verdict of Fontana and the dictates of common sense are however against it, and it is quite impossible to perceive how in any way it could be of value.

Cedron.—The nut of the *simaba cedron*, and *guaco*, the root of *mikania guaco*, are two remedies which have been greatly praised, especially in South America. Cedron† is stated by M. Dumont (Aug. Dumeril‡ rep.) to be so perfect an antidote to viper venom that if freely given to an animal beforehand it becomes insusceptible to the effects of viper venom, and may then be bitten again and again with entire impunity. If this be correct, no better evidence of the value of this antidote can be offered, and the only possible defect in the evidence might arise from the fact that the vipers were directly used, in place of known amounts of their venom. We shall see hereafter, that like powers have been ascribed to another antidote, which was found to fail under this test, applied with fitting precaution in my own laboratory. Late in the fall of 1860 I became possessed of a sufficient amount of cedron to test the above statements of M. Dumont, but unfortunately my snakes were torpid, and long captivity had so diminished their capacity to secrete venom that I was obliged to delay my examination of cedron until I should be more fortunately situated.

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* There is still another objection to ammonia, arising from the fact that it possesses the power of rendering the blood incoagulable, as Dr. Richardson, of London, has shown; and although the loss of coagulability arising from this agent and that which comes from venom poisoning are probably different, it should still have some weight in deciding our choice between ammonia and alcohol.

† Cedron is chemically a simple bitter, not unlike quassia.

‡ Notes Historique sur la Ménagerie des Reptiles du Muséum. Mém. du Muséum, vol. vii. p. 273.

Guaco, vaunted by Vargas* and Chabert† as a prophylactic against snake bites, or rather their effects, must be a marvelous remedy if all said of it be true. I have no personal experience of its use.

Arsenic, unlike many of the supposed specifics against snake bites, certainly does not belong to the class of expectant remedies. It has been principally used in the East Indies, as the well-known Tanjore pill. This medicine is composed of arsenious acid, three East Indian roots, of which two are purgative, and one an active acro-narcotic, mixed with pepper, and the juice of the wild cotton plant. Each pill contains three-fourths of a grain of the arsenic. Two are given at once, and one at the close of an hour; no trifling dose of so potent a medicament. Russell, p. 65, examined this agent, and pronounced against its use; nor has it retained the celebrity which it once enjoyed. I have made no personal examination of its merits, nor indeed could I have procured the pill in question, which really contains other and active ingredients besides the arsenic.

Bibron's antidote has a very singular history, to which I have elsewhere called attention. It is thus described by my friend Prof. Hammond.‡

"Some four years since, Prince Paul of Wurtemburg, the celebrated naturalist, communicated to my friend, Mr. de Vesey, (Xantus,) the results of some experiments performed before the French Academy of Sciences by Professor Bibron, relative to an antidote to the venom of the rattlesnake. According to Prince Paul, Prof. Bibron allowed a rattlesnake to bite him in the lips, cheeks, etc., and by taking the antidote discovered by him, prevented all alarming symptoms, and, in fact, suffered no inconvenience therefrom. The antidote in question, as stated by Prince Paul, is prepared according to the following recipe: ℞.—Potasii iodid. grs. iv; hydrarg. chlorid. corrosid. grs. ij; bromini, ʒv. M. Ten drops of this mixture diluted with a tablespoonful or two of wine or brandy constitute a dose, to be repeated if necessary. Prince Paul forwarded some of this medicine to Mr. De Vesey, who used it successfully in two cases of men bitten by rattlesnakes."

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* Semanario de agricultura yartes dirigido á los párrocas, vol. iv. p. 397, Madrid, 1798.

† Du Huaco et de ses vertus médicinales in, 8vo., 1853.

‡ Am. Journ. Med. Sci., No. lxix. p. 94, 1858.

Prof. Hammond then proceeds to state two cases and certain experiments on animals. The first case was satisfactory as evidence, the second, which was reported by Dr. Coolidge, was less so, as Brainard's local treatment was also made use of.

The experiments were as follows: A young wolf was bitten by a very large rattlesnake. In thirty minutes, the symptoms being severe, six drops of the antidote were given. Relief occurred almost immediately, and recovery followed. Next day the same snake was allowed to bite the same wolf thrice. Before the antidote could be used, the animal fell and was apparently dead; the remedy poured into the throat remained there, but seemed to revive the animal for a time, when finally, at the twenty-seventh minute, death took place. The third case failed altogether, owing to the dog being unable to swallow when the antidote was given. In the last experiment, the snake having been used the day before, bit a dog in the jaw; his symptoms were not extreme, and he recovered perfectly after taking the antidote. Two of these cases, therefore, got well, and two died. Mr. De Vesey* (Xantus) reports a severe case of bite in a boy in whom the use of the antidote was followed by rapid amendment and permanent relief. Several experiments on dogs are also related, but the account given is wanting in details. He also states that dogs which had taken several doses of the antidote "*were for some time incapable of being infected by the venom of the rattlesnake.*" Dr. Heery† relates a case which was treated within five minutes, and promptly relieved. The information as to the bite was scarcely so full as might have been desired. Dr. Sabal‡ gave the antidote freely to six dogs, of whom two recovered.

The defects in the experiments above quoted must be plain to any one who has carefully followed my exposition of the fallacies which attend upon the direct use of the serpents in place of the injection of known quantities of their venom. Moreover, the reader will remember also that the suddenness of recovery is really a part of the natural phenomena of this mode of poisoning.

My own experiments with Bibron's antidote have been such, on the whole, as to lead me to regard it with considerable doubt. While expressing this opinion, I ought also to say that those who first used it in this country were skilled observers, whose views are entitled to so much respect, that I shall still consider the question as somewhat unsettled until other observers have followed in my own track of research, employing the same caution which I have endeavored to preserve.

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* Am. Journ. of the Med. Sci., No. lxx. p. 375, 1858.

† Am. Journ. Med. Sci., No. lxxvi. p. 574, 1859.

‡ Savannah Journ. of Med., September, 1858.

Before I became well acquainted with the peculiarities of the rattlesnake and its venom, I made the first series of observations which I shall now relate. Eight dogs were subjected to the fangs of rattlesnakes, which had been from three to five weeks in captivity, but had bitten nothing for a week. In all of the cases, the symptoms were serious; but of the eight only three died. A second set of dogs, eight in number, and resembling as nearly as possible the first set in weight and other circumstances, was selected for comparative study. After each of them was bitten, he was watched, and on the first appearance of grave symptoms, the bromine antidote was used in the manner about to be described: When no severe symptoms declared themselves within a reasonable period, a second snake was permitted to bite the animal; and again, upon the symptoms declaring themselves fully, the antidote was given as usual, although in somewhat smaller doses than those which I afterward employed. Of the eight dogs *three* recovered. So small a proportion, as compared with the recoveries of dogs bitten, but not treated, lends very little aid toward the solution of the question. I have selected, for full statement, three of the eight cases in which bromine was used:—

Experiment.—Black cur, weight 34 pounds, was bitten by both fangs 2½ inches above and to the right of the anus; pulse, before the bite, a little irregular (a natural condition in the dog) and about 137; he yelled when bitten, and being set at liberty moved about uneasily. At the 15th minute, pulse 155, and weak; dog lying down, disinclined to move; muscles about tail twitching; he received 3 drops of the antidote in 10 of alcohol, and 4 ounces of water; the dose was given without the stomach tube and seemed to annoy him. 35th minute, swelling large and growing; pulse 120, feeble; respiration tremulous; when thoroughly aroused, he can walk, but seems inclined to lie down. 80th minute, pulse 130; swelling larger; took 4 drops of the antidote with water only; the pulse 124 to 130; no longer irregular, but feeble respiration as before. 119th minute, nausea and partial vomiting; appears stupefied; sensation still good. The presence of water seemed to excite in him the utmost dread; on its approach he rose and staggered backward, and fell as before; at the close of the third hour he took 5 drops of the antidote, and was then left until next day, when he was to all appearance well, and ate and drank greedily. The wound sloughed but little externally, although a large abscess formed beneath the skin. He gradually recovered from this, and experienced no secondary evils.

Experiment.—A mongrel terrier, weight 10½ pounds, about 19 months old, was bitten under the jaw by one fang, and on the knee by two fangs. At the second minute he fell; with feeble pulse and much local quivering; took four drops of the antidote. At the 25th minute, micturated and passed solid stools; took six drops of antidote, shortly after which the quivering became general; the pulse more rapid and feeble; the breathing labored, and vomiting took place at the 60th minute. There was no odor of bromine in the matter ejected, and in general the speed with which this substance disappeared from the stomach was remarkable. Death took place at the 63d minute, without convulsions.

Experiment.—A large black terrier, weight 24 pounds, was bitten on the foreleg by one fang, and again by one fang on the inside of the hind leg, nine minutes later; the last wound bled about two ounces, and swelled but little; he sunk down almost immediately, making efforts to vomit. At the 18th minute, took four drops of the antidote, and again, three drops at the 32d minute; the respiration now became laborious and jerking, and the dog was unable to stand at all; five drops were now given, when he got up on his feet, coughed a little, and again lay down. At the 70th minute, another dose of four drops was given. At the 76th minute, the heart-beat imperceptible; respiration only occasional; involuntary evacuations; general fremitus; death.

In the remainder of my experiments I used known quantities of venom, which I injected; and the doses of venom employed were large and the dogs themselves of greater size. These observations were nine in number, and in all of them the amount of venom given was such as my experience taught must in all likelihood have been fatal were no antidote resorted to. In each of four cases the prophylactic power of the antidote was tested, and in the remainder this medicine was given *after* the venom had been injected.

Experiment.—Prophylactic power of bromine antidote. A brown bitch, weight 27 pounds, received through a stomach tube seven drops of the antidote in water; and in twenty minutes eight drops. Three minutes later, ten drops of rattlesnake venom was injected into the left fore shoulder; five minutes later, the local quivering was marked and the animal vomited some mucus and water, having neither smell nor color of bromine; pulse feeble and rapid. At the 74th minute, the animal was cold, and received five drops of the antidote; immediately after which she regurgitated a small amount of fluid into her mouth, but swallowed it again. The taste of the bromine seemed to annoy her, and she coughed considerably, and with much effort stood up and walked a few steps; this appearance of amendment was fallacious; she fell again, and so remained, until at the end of three hours and twenty minutes death occurred without convulsions.

Experiment.—A white cur dog, weight 24 pounds, took eight drops of the antidote at nine in the morning, and received no food up to a quarter to five P.M., when five drops of antidote were given in five ounces of water. Seventeen minutes later, ten drops were given as before; this dose appeared to annoy the dog, and in a few minutes he vomited; the matters expelled, water and mucus, smelled of bromine. At the 24th minute, five drops more were given, and again a slight attack of vomiting followed; but I did not think that he lost thus all of the bromine. At the 27th minute, I gave three drops of antidote, which were retained; and at once I injected ten drops of venom on the outside of the left fore shoulder. At 31st minute, made water freely. At 33d minute, very weak; stands with head drooping; quivering about wound conspicuous. 35th minute, urinated and defecated; lies down groaning. At 41st minute, gave three drops of antidote, when he rose up, moaned, and fell again; extremities cold; pulse feeble; respiration laborious and quivering. 42d minute, pupils dilating. 86th minute, general muscular quivering; wound much swollen; convulsive motions of head and jaw. Death at the close of an hour and forty-five minutes.

Experiment.—Mongrel dog, weight 23 pounds; took ten drops of Bibron's antidote, and in thirty minutes five drops more; forty-five minutes later, three drops more were given, and at the same time eight drops of venom were thrown into the left fore shoulder; in a few minutes the dog became extremely feeble, fell down, made unsuccessful efforts to vomit, and had a slight but general convulsive movement; at the close of an hour and twenty-five minutes, he was growing rapidly worse; when I gave five drops of antidote and left him. Sixteen hours after he was found dead and in complete rigor mortis.

Experiment.—The remaining case was differently treated. The dog received every night and morning seven drops of the bromine antidote during three days, and was then poisoned with seven drops of venom just after taking his last evening dose of the antidote. He died during the following night, the wound being found enormously swollen with fluid blood.

Five experiments were made with the same antidote, which I gave to dogs after injecting their tissues with venom. All of the dogs were large—none less than twenty-six pounds in weight—and all received the same dose of venom, about seven drops, and all were treated immediately with ten drops of antidote, and afterward with five-drop doses if they grew worse. If they mended, they were merely watched. Two of the five recovered; one of these being the smallest, the other the largest of the dogs. The remaining animals perished; one of them surviving thirty-one hours, and another three days.

The experiments here related, ahd the general results of the use of Bibron's antidote are, on the whole, so discouraging as to render it probable that it is in reality not more valuable than other agents which have once enjoyed an equal reputation. While expressing this opinion, founded chiefly on my own inquiries, I cannot help feeling that it is impossible to settle the question definitively without a further and larger experience in the form of human cases of venom poisoning, which should be studied with care by the light which I have endeavored to throw upon the subject—reference being had to the number of fang-marks, the size of the snake, etc.

Alcoholic stimulus is not so ancient a remedy in snake bites as most of the means already discussed. William Patterson, in 1791, after speaking of the effects of snake bites, advises the use of the Tanjore pill, and failing in this, Madeira wine, strengthened with brandy, and given in full doses.* In 1823 William Mayrant† reported cases of the use of alcoholic stimulus in snake bites. Dr. Atchison,‡ 1853, is the next authority advising its use; and finally, Dr. Alexander,§ in a brief essay, already alluded to, reports cases in which it was employed, and assigns to it a correct position as a physiological antidote, or counter-active agent. The three American authors last named mention the use of stimulants in these cases as if it were common, and in fact throughout this country the practical sagacity of physicians generally, and even of those who were not, seems to have perceived how plainly a stimulant was needed to correct the depression produced by venom. That the popular theory of the stimulus as a neutralizing antidote is incorrect, and that the remedy has been often abused in practice, admits of little doubt; but the general reliance placed upon it must, to some extent, be admitted as evidence in its favor, whenever other and more scientific proof of efficacy can be brought forward.

Besides the authors named, and a brief additional record by Dr. Burnett, there are no cases on record in which alcoholic stimulus was principally used. In examining the few cases alluded to, we are struck with the enormous amounts of stimulus which can be taken by a patient under the influence of venom, and indeed the very antagonism between the effects of the poison and that of the remedy which we may thence infer to exist, is of itself something in favor of the treatment alluded to. Many cases have been related to me, in which the patients took pints of brandy or whisky within a few hours; but I prefer to quote from Burnett* the following case, as sufficiently illustrative of my meaning:—

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* Four Voyages into the Hottentot Country, and into Caffraria. 4to. 1791, London.

† Amer. Med. Recorder, vi. p. 619, 1823.

‡ Southern Journal of Med. and Phys. Sci., i. p. 47, 1853.

§ On the Use of Alcohol in Snake Bites; St. Louis Med. and Surg. Journal, xiii. 116, 1855.

"Mr. B. was bitten just above the heel, when three-quarters of a mile from home. The usual symptoms of acute pain and large swelling immediately followed. He soon after complained of being blind and of having general pain, with the usual signs of prostration. The patient took one quart of brandy within an hour, but, although nauseated, he was not made drunk by this nor by a second quart, taken during the two ensuing hours."

In Dr. Atchison's† case a delicately-nurtured young lady, aged seventeen years, took within a few hours three pints of whisky, without the least intoxication being observable. The physician who recalls the cases of low fevers in which he has had occasion to give stimulants, with an eye to their effects less than to their amount, will not be surprised that, in the face of a deadly sedative, the system should acquire this tolerance of alcohol.

The manifest adaptation of stimulus to meet the indications in cases of rattlesnake bites is, then, a strong point in favor of this mode of treatment. If, forgetting the local cause, we were called on to observe a case of snake bite, and to note the enfeebled circulation, with pallor, nausea, and general prostration, we would almost by instinct resort to some stimulant, nor would our decision be incorrect. The early feebleness of the heart, and the depression of the nerve functions, so obvious to the eye, is not less notable when we come to measure, by more accurate means, the loss of cardiac energy, and the diminution of the intra-arterial pressure. For the details of the researches establishing these facts I must again refer to my former essay, contenting myself with the simple statement that the general result of my experimental inquiries led me even then to suspect that a rational treatment of venom poisoning could scarcely dispense with stimulants, at least in the early stages of the malady.

If, then, I am correct in my views, alcohol is to be looked upon as merely a counter-active agent; in a word, as a stimulus to be employed to buoy the patient over the prostration caused by venom poisoning. More than this it certainly is not, and those who have looked upon it as a direct chemical antidote, and as available for local treatment, need but to be told, to settle the matter, that a mixture of alcohol and venom is not less poisonous than the unmixed venom.

In conclusion, I ought perhaps to notice the argument against the use of stimulants, founded upon the fact that intoxicated persons have been bitten, and found no immunity in their condition. I have, however, discussed this question elsewhere, and I desire to state here only the simple fact that, in the cases alluded to, no attempt was made to keep up the essential condition of stimulation. Furthermore, profound intoxication, where that has pre-existed, is not the condition which is to be desired, nor should we seek to do more, in using the alcohol treatment, than merely excite and sustain the flagging energies of the system, just as we would desire to do were the evil to be remedied an overdose of tartar emetic.

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* Proc. Boston Soc. Nat. Hist., vol. iv. p. 315.

† Southern Journal of the Med. and Phys. Sci., vol. i. p. 47, 1853.

The following experiments were made in part during 1859 and 1860, and were broken in upon in the fall of the latter year, by circumstances which interfered with their completion. They are neither so numerous nor so varied as I desired to make them, but, in conjunction with what has already been urged, they appear to me to strengthen the popular notion in regard to the value of alcoholic stimulants in snake bites. The first two cases ended fatally, as follows:—

Experiment.—Dog of mixed breed, chiefly setter; weight 34 pounds. The animal standing, his pulse was 80, and but a little irregular. He was tied, as usual, to the leg of a table; pulse 86. The snakes had not been used for three weeks, and were very active. A large serpent bit the dog in the groin, upon which he howled fearfully, and made desperate efforts to escape. In 10 minutes, pulse 120. At 13 minutes he was bitten again by a snake, which struck him twice, in right groin and right shoulder, before he could be removed; 17½ minutes after first bite, pulse 134, feeble; 10th minute, dog howling, very weak, urine dribbling; 23d minute, gave 1½ʒ alcohol in 4 ounces of water, when at once he vomited a yellow bilious matter, and the pulse fell to 120; 26th minute, gave alcohol 1ʒ, as before, pulse 120, no longer irregular. At this time he lay down suddenly, and at the 28th minute took, with extreme difficulty, another drachm of the alcohol; 30th minute, general fremitus, pulse 120, but excessively feeble; 35th minute, took 2 drachms of alcohol, pulse 200, and feeble, breathing irregular; 48th minute, the dog was evidently dying, when he took 2 drachms of alcohol, and perished, with a slight general convulsion, 65 minutes after the first bite. The blood was diffluent, and did not coagulate on being kept for 24 hours. The colon contained dark fluid blood, and the peritoneum was dotted with ecchymoses.

Experiment.—In this case, a small cur, weight 10 pounds, was twice bitten in the leg by a large and active serpent. At the 5th minute he was feeble, pulse 120; before the bite, 116. 6th minute, gave 4 ounces of whisky, and repeated it at the 8th minute, when the heart was becoming more rapid and stronger. 10th minute, gave 1 ounce of whisky; pulse 128, and strong. At this time I was forced to leave him, and returning in an hour, I found him lying in a puddle of vomited matters; pulse 168, and feeble; I gave about 3℥ whisky, but the dog ejected it at once, and, stretching himself, expired quietly.

The first of these cases was probably too freely poisoned for any hope of recovery. The second exhibited the constitutional effects of the stimulus, and might possibly have recovered.

Experiment.—Four efforts were made to test the prophylactic value of alcoholic stimulants. To each of four dogs, at different times, I gave two drachms of alcohol, in water; one became sleepy at once, the others were more or less excited. All were poisoned by the injection of 8 or 9 drops of venom; the injection being delayed an hour in the case of the dog, whom the alcohol stupefied. Under the influence of the venom, the exhilaration passed off rapidly, and in two the pulse rose and became feeble; while in the remainder it fell in force, but in number rested unchanged. The alcohol was now continued in each case, with one-drachm doses at intervals dictated by the symptoms. In the case of the dog specially alluded to above, the alcohol seemed to possess but little of its usual exciting power; his pulse changed less than the others, and in an hour and forty minutes he died convulsed, having taken in vain four ounces of alcohol. A second dog succumbed in three hours after the third dose; his heart failed to respond as before, and he sunk rapidly, but with his senses curiously clear, so that a few minutes before death, he followed the motions of a large fly hovering above him. The remaining pair both got well, and as the stimulus manifestly affected them, and as the dose of venom given was such as was likely to have killed, it seems fair to infer that the alcohol really aided them.

Experiment.—In two remaining cases, I gave whisky. One dog of rather small size took it with such freedom that, after being poisoned with 10 drops of venom, he swallowed within seven hours 18 ounces of this stimulus, not only without being injured, but with the most apparent good effects on his circulation and strength. The second dog experienced some good from the first dose which followed his poisoning, but he vomited so incessantly afterward as to baffle my efforts to keep up the use of the stimulus. I tried, finally, to excite him anew by ether inhalation, but the effort came too late, and he perished.

I am not disposed to lay too much stress on the above cases, but they taught me distinctly enough that stimulation was really of some use in venom poisoning, and I suspect that experience will hereafter bear me out in this conviction.

The disease caused by the venom is sometimes so prompt and terrible that it is impossible to rouse the system through the stomach, and this is doubly difficult when vomiting becomes one of the prominent symptoms of the general prostration. Under these circumstances, enemata of brandy may be used, and inhalations of hot alcohol or even of ether resorted to, in order to re-excite the flagging powers.

When called to a patient who has been bitten by a rattlesnake, the physician should at once ligate the limb with a *broad* band, as tightly as may be needed to check the circulation, while wherever it is possible cups should be also used immediately over the wound. The question of immediate excision or ablation of the part will be then determined by considerations already before the reader, (local treatment.) Setting these means aside, the iodine treatment, as limiting the local disease, may be then resorted to; but if, as is usually the case, there is no instrument at hand to make possible this treatment, incisions and the actual cautery are the final resort. Meanwhile, stimulus in some shape should be given, and when the excitement thus obtained is sufficient, the finger should be laid on the pulse and the band loosened. As the system becomes depressed, the ligature is once more to be drawn tighter, and, with continued use of stimulus, the economy prepared for another dose of the venom, which is thus to be antagonized little by little. Finally, it will be requisite to shift the band higher up the limb, to avoid the too great constriction of the damaged member. The further management of the case, with regard to stimulus, must be left to the physician, who will remember that in most cases of severe poisoning, he has to deal finally with a blood which has lost a part or the whole of its power to coagulate. He may find in the mineral acids, tonics, as quinine, and the continued use of stimulus, the necessary means for carrying his patient through the later stages of the malady.

I indulge the hope that the great interest of this subject may hereafter tempt physicians in this country to observe more minutely and record more fully such cases of snake bites as occur in their practice, observing them not as well-known maladies, but as instances of disease produced by animal poison, and of whose course and symptoms we know really but little.

ART. II.—*Case of Cystine Calculus in a Dog.* By S. W. GROSS, M.D., Lecturer on Surgical Anatomy and Operative Surgery.

CALCULI, composed of cystine, or of cystic oxide, as this substance was called by Dr. Wallaston, are rarely found in the human subject, but in the dog their occurrence is by no means uncommon. Having recently met with a case of this kind, I have been induced to report it, thinking that, as an object of comparative pathology, it might not prove altogether uninteresting.

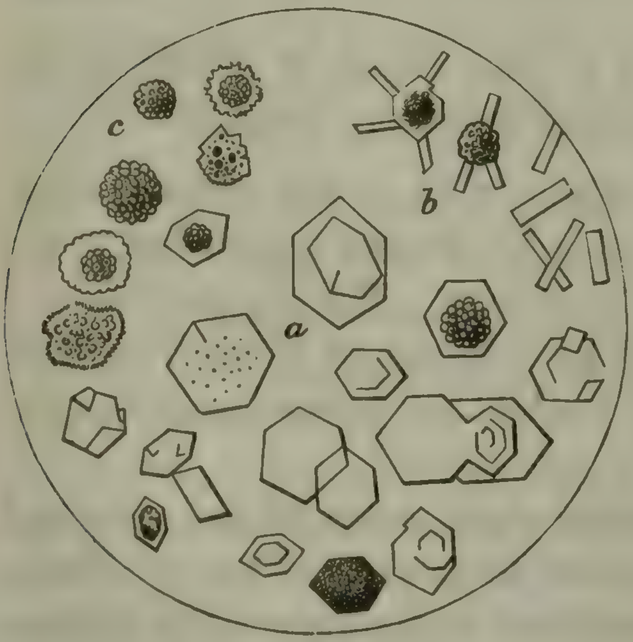
The subject was a Scotch terrier, about eight years of age, who had been struck over his loins with a stick about three years before his death. During August, 1860, my attention was drawn to the remarkable fullness of his perineum, and the very frequent desire which he evinced to make water, the act being somewhat difficult. He soon began to lose his usual sprightliness, and walked with considerable difficulty. Some weeks having elapsed, he showed signs of great suffering, barking and howling in the most piteous manner. The urine generally passed by drops, was frequently bloody; and when he walked, his hind and fore legs were drawn together, his loins were curved and his flanks drawn in. His appetite gradually failed, and he lost flesh. Several weeks before his death, which took place about the middle of December, his gait was that of paralysis, the hind limbs being dragged after him.

Fig. 1.

These symptoms pointed unmistakably to the existence of a vesical calculus, and I was therefore not disappointed on opening the body in finding a beautiful stone, the external appearance and dimensions of which are shown in *fig.* 1. It was grasped by the apex of the bladder, which was much contracted, and a portion of its mucous membrane was adherent to the surface of the calculus. The prostate gland was somewhat hypertrophied, but the kidneys and ureters, as well as the other internal organs, were normal.

The calculus was semi-crystalline, and covered with smooth tubercles; its color was that of ordinary beeswax, its weight eighty grains, and specific gravity 1·060. Being easily scraped with the knife, I obtained a sufficient quantity to act upon by chemical tests. It was found to be soluble in sulphuric, nitric, and chlorohydric acids, and in ammonia. Nitric acid being evaporated upon it, a dark-brown residue was left, and under the blow-pipe it was dissipated with a very disagreeable odor. Liebig's test showed very conclusively the presence of sulphur.

Fig. 2.



A few drops of liquor ammoniæ being added to the calculous scrapings, and the solution allowed to evaporate slowly on a glass slide, presented under the microscope the characteristic crystals of cystine, shown in *fig.* 2. At *a* are seen hexagonal plates, for the most part transparent; others are opaque in their centres, and some are laminated. At *b* the crystals assume a rectangular form; and at *c* they present themselves as round, or irregular hexagonal masses, crenate at the margins, dark in the centre, and resembling rosettes. The latter form and the six-sided plates existed in the greatest abundance, and very often formed large and confused masses.

Bi-Monthly Abstracts;

OR, BI-MONTHLY NOVELTIES IN MEDICAL, PATHOLOGICAL, SURGICAL, OBSTETRICAL, PHYSIOLOGICAL, AND CHEMICAL SCIENCE.

SURGERY.

BY S. W. GROSS, M.D.,
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I.—*On Lead Amaurosis.* By ROBERT SCOTT ORR, M.D. (Glasgow Medical Journal, vol. viii. No. 31, 1860.)

DR. ORR having met with an instance of amaurosis, the result of lead poisoning, makes it the basis of a very interesting paper, and has collected twenty-seven cases, all that he was able to find recorded, of this rare and singular affection. The subject was very fully discussed, nearly a quarter of a century ago, by Tanquerel, and from his treatise on the diseases resulting from the toxic properties of lead the author has collected many of the facts contained in his communication.

The patient of Dr. Orr was a boy, twelve years of age, of a scrofulous habit, who was admitted into the Glasgow Royal Infirmary on the 29th of June, 1860, laboring under the symptoms of lead poisoning. For three years he had been working in a pottery, and for two-thirds of this period he worked in clay, during which time his health was excellent. At the commencement of the third year he was transferred to the glazing department, and in a few months his general health began to suffer. After the lapse of seven months, he had an attack of lead colic, and also another attack six months previous to his admission to the infirmary, and for the last four months his friends noticed a well-marked blue line along the margin of the gums. On the seventh of June he felt cold and uncomfortable, and cerebral symptoms manifested themselves, consisting in four very severe epileptic convulsions, each of about a minute's duration, and all occurring within about ten hours, and succeeded by a state of unconsciousness, which lasted about fifty hours. For several days after this, his mind wandered, he complained of pain in the abdomen, but was able to walk about. On the fourteenth the first indications of paralysis were noticed, and these gradually increased; intense headache then supervened. On admission, the patient was much debilitated, his limbs were partially paralyzed, and the muscles, especially those of the upper extremities, were much wasted. For two days he had been almost totally blind; the eyes were very prominent and the pupils widely dilated. He still complained of pain in his head, but he was quite sensible, and his memory was unimpared. The left facial nerve was paralyzed, the corresponding side of the face being fixed and devoid of expression. In about two weeks the third nerve became affected, as was shown by the existence of ptosis, the conjunctiva was inflamed, and was the seat of a copious purulent discharge. After the lapse of six weeks he was much stronger and stouter, the facial paralysis and ptosis had nearly disappeared, but the eyes remained fixed and motionless, and his vision was not at all improved.

An examination with the ophthalmoscope revealed apoplexy of the retina, its vessels being much congested, and its surface covered with ecchymosed patches.

The treatment in this case consisted, at first, in sustaining the patient's strength with wine and nourishing diet, and in the application of a small blister to the nape of the neck, together with the internal administration of the iodide of potassium, which was, however, discontinued for a time, but was afterward resumed, and continued throughout the remainder of the treatment. Active purgation was not at first employed, for fear of increasing the debility; but the bowels were attended to, and, as soon as his strength permitted, cathartics were freely administered. His stools were black, and he always felt much better after each motion. Opium had a happy effect in procuring rest and sleep, and nux vomica was given for the paralysis of the face and limbs. The facial palsy seemed to have been benefited by free counter-irritation to neck and behind the ears, and a seton was also inserted in the nape of the neck. On the fourteenth of September the patient continued amaurotic, but his general health was much improved. The probability is that he will remain permanently blind.

In reviewing the twenty-seven recorded cases of lead amaurosis, Dr. Orr divides them into three classes: First, those in which the amaurosis preceded other forms of lead affection, and was the first indication of the effect of lead in the system; second, those in which the amaurosis was preceded by colic, constipation, articular pains, and paralysis only; and third, those in which it was ushered in not only by colic, articular pains, and paralysis, but also by various head symptoms, such as delirium, epilepsy, convulsions, and coma, constituting what Tanquerel has designated encephalopathy.

In the first class of cases, or those in which amaurosis was the first indication of lead in the system, we find but five cases recorded, and four of these are remarkable from the fact that the patients had been exposed to the effects of lead, for periods varying from six to twenty years, before they became amaurotic. Under the second class thirteen cases are enumerated, and under the third nine cases, in which is included the case of the author. The duration of lead amaurosis is recorded in sixteen cases, which ultimately recovered. In seven it lasted from one to nine days; in four, for about a fortnight; and in five, from nineteen to seventy days.

II.—*Wound of the Spinal Cord, followed by Recovery.* By M. PRESTAT. (Gazette Hebdomadaire, No. 49, 1860.)

A boy, fifteen years of age, was wounded with a knife in the lower dorsal region, and immediately fell down, remaining for some time in the recumbent posture, from inability to rise. When seen, four hours afterward, M. Prestat found that the knife had penetrated the cord between the laminæ of the tenth and eleventh dorsal vertebræ. There had been little hemorrhage, but a large quantity of a limpid, serous fluid had escaped from the wound. The expression of the youth was denotive of great suffering, the pulse was small, the skin cold, the intellect clear, and respiration was carried on in the most perfect manner. He had vomited once, but there was no involuntary escape of urine, nor of fecal matter, and the lower extremities were paralyzed—the left completely, the right partially. During the evening of the same day, the warmth of surface had returned, and the pulse became natural. He was bled at this time, as well as on the following day, and for several days it was found necessary to evacuate the bladder with a catheter, a purgative enema being administered at the end of a week. During this period the wound remained open, and gave issue to a large quantity of cerebro-spinal fluid.

The patient soon regained control over his bladder, and the wound began to cicatrize. Somewhat later, defecation became easy, but the paralysis persisted, and the left leg became atrophied. About a month after the injury M. Prestat had recourse to electricity, under the use of which motion and sensation gradually returned. By degrees the cure was complete, without any trace of the lesion remaining.

III.—*Undescribed Malformation of the Lower Lip Occurring in Four Members of One Family.* By J. JARDINE MURRAY, F.R.C.S.E. (British and Foreign Medico-Chirurgical Review, October, 1860.)

The congenital malformation described by Mr. Murray consists in the presence of two sacculi or pouches in the lower lip of the father, the first, third, and eighth children of the same family, their ages being respectively forty-one, seventeen, thirteen, and one and a half years. The pouches in all these cases are exactly similar, and the description of one will suffice for the rest. The under lip is prominent and fleshy, and about a quarter of an inch from the external edge of the mucous membrane of the prolabium are two crescentic openings, one on each side of the median line, the horns of the crescent being directed forward and a little outward. A probe passes to the depth of half an inch under the thick mucous membrane, and each sacculus can readily admit a split pea. They secrete a glairy mucus, do not communicate with each other, nor does their presence produce any inconvenience.

Mr. Murray, as well as many other medical men, is unable to account for the existence of this curious affection, but inclines to the opinion that it may be explained by some peculiarity in the development of the frænum, or that it is the result of intra-uterine disease of the labial glands. Besides the pouches of the lower lip, other defects of formation exist among the members of the same family, to a striking extent, and show in a remarkable manner the hereditary nature of malformations. The mother, and her second, fourth, and sixth children are perfectly well formed. The father's mother, aged sixty-five, has a very narrow and much arched palate. The father, aged forty-one, has two sacculi in the lower lip, and was operated on for a double hare-lip by the late Mr. Liston. The first child, a girl, aged seventeen, has two pouches in the lower lip. The third child, a girl, aged thirteen, has a sacculated under lip, and was operated on for double hare-lip in infancy. The fifth child, aged nine, has the palate much arched and very narrow. The seventh child, aged three, has the ring and middle fingers of both hands webbed; and the eighth child, aged eighteen months, has a sacculated lower lip, and was relieved of a single hare-lip.

IV.—*Sebaceous Tumors Simulating External Piles.* By Professor Hyrtl. (Journal de Médecine de Bordeaux, No. 11, 1860.)

Professor Hyrtl having been affected for eight days with two round tumors, about the size of a pea, situated near the margin of the anus, believed himself to be the subject of external piles. They were free from pain, did not give rise to the slightest inconvenience, nor were they influenced by cold ablutions. Having a great desire to see them, he made use of two mirrors, and to his astonishment found that the tumors were white, instead of being blue as in the case of hemorrhoids. This fact led him to fear the existence of some malignant disease, and on raising them one day, as he often did, to assure himself that they were not adherent to the deeper structures, he detached a soft, round body, which was found, under the microscope, to consist of corrugated sebaceous cells, a large quantity of fat, granular matter, and epithelial scales, with some cholesterine. He was now aware that he had to deal with sebaceous tumors, and inasmuch as the sebaceous follicles situated about the anus are devoid of muscular fibres, they evinced a great tendency to refill, which was, however, prevented by compression. Dr. Hyrtl does not enter fully into the anatomy of these follicles, simply stating that the largest are situated nearest the anus and that several open upon the mucous membrane of the rectum. Simple compression will suffice, in every case, for the cure of these tumors.

V.—*Ovariotomy in London Hospitals.* (British Medical Journal, Dec. 1st, and Dec. 8th, 1860.)

Between January, 1858, and November, 1860, twenty-eight operations for ovarian tumors have been performed in London hospitals, the general result being fifteen deaths, against thirteen recoveries. In two of the recoveries from the operations, the patients died some months afterward of cancer, and eleven of the recoveries have been permanent, the subjects being now strong and well. Twelve of these cases occurred to Mr. Spencer Wells, in the Samaritan Hospital, the result of his experience in hospital practice being eight recoveries against four deaths.

Between February, 1858, and October, 1860, (*Medical Times and Gazette*, December 1st, 1860,) Mr. Wells has operated in twenty cases, twelve, as stated above, being in the Samaritan Hospital, the remaining eight occurring in his private practice. Of the latter, five were successful and three terminated fatally. These statistics, although small, undoubtedly prove that ovariotomy is justifiable in certain cases.

VI.—*On the Preventive Treatment of Ectropion by Temporary Closure of the Lids.* By M. Debrou. (Gazette Hebdomadaire, No. 45, 1860.)

In a communication to the Surgical Society of Paris, M. Debrou calls attention to the prevention of ectropion, consequent upon malignant pustule, by closure of the eyelids. So soon as the slough has been cast off, a large granulating wound is left, and during the process of cicatrization, the parts contract to so great a degree as to evert the lid, thus necessitating a plastic operation for its restoration.

In order to prevent this deformity, he places the lids in such a condition as that the contracting force cannot act upon the one likely to become involved. This he accomplishes by the production of an ankyloblepharon, which is unattended with bad consequences, since, when it is destroyed, the sight is found to be perfectly good, notwithstanding the eye has been deprived of rays of light for a longer or shorter period. The operation is very simple, consisting merely in removing with the scissors a small portion of the free border of each lid, being careful to avoid the lashes. The raw surfaces are then brought together with from four to six points of suture, and union is almost always obtained. In order to permit of the escape of tears and mucus, as well as to admit of the introduction of a delicate grooved director, upon which the interciliary cicatrix can readily be divided without danger to the globe of the eye, when the cure is effected, M. Debrou advises that both angles of the eye should be left a little open.

In regard to the length of time the lids should be kept closed, it is impossible to give a definite answer. They should rarely be separated before the third month; sometimes not even for one year; in general terms the union is to be maintained until the loss of palpebral substance is completely repaired and has undergone as much contraction as is possible.

VII.—*Spontaneous Cure of Cataract.* By ST. GEORGE PEACHY, M.D. (Maryland and Virginia Medical Journal, February, 1861.)

Mr. M., fifty years of age, of correct habits, and accustomed to exercise a great deal in the open air, was the subject, in 1835, of inflammation of the left eye, attended with the most intense pain. The inflammation was subdued in the course of time, but he suffered occasional pain, and the sight of the right eye became impaired. In a few years the left eye became completely cataractous, but he was still able to see quite well with the right, so that an operation was not deemed advisable. The left globe was also unusually prominent. Dr. Peachy thus concludes the imperfect account of the case. "Several months ago, Mr. M. felt a renewal of the fullness, he first spoke of in the globe of the eye—pain accompanied it, and suddenly he felt 'something give way.' To his astonishment, upon raising the lid, his sight had been restored to him as if by miracle, and for six months he has enjoyed as perfect vision as ever. In proof of this last assertion, in the presence of myself and others, he has read with the left eye alone, an ordinary newspaper print with perfect ease and without the aid of glasses. The lens escaped into the anterior chamber, fell below the axis of vision, and has been undergoing gradual absorption. It was a hard, lenticular cataract, judging from its size and the amber color so frequently mentioned by writers on this disease. The right eye has recovered its normal vigor, and Mr. M. has now perfect vision and no pain. Excepting the small amber-colored body resting against the lower margin of the cornea, within the anterior chamber, no one would discover that Mr. M. had suffered from any such affection as that of which I have given you the above description, and of which I can find no such termination in any work in my possession."

VIII.—*On Lithotomy in Persia.* By Dr. POLLAK, of Teheran, Persia. (Edinburgh Medical Journal, January, 1861.)

The Vienna correspondent of the *Edinburgh Medical Journal* gives an account of a very interesting communication made to the Royal Society of Physicians, by Dr. Pollak, the private physician of the Shah of Persia, "on 158 lithotomy operations performed in Persia between November, 1852, and June, 1860." Lithiasis is very common in Persia, and is usually confounded with gonorrhœa. Men are more frequently affected than women, the rich and poor are equally subject to it, and the malady is rarely seen among the Jews and Armenians, and the author has never witnessed it in the negro race. In regard to the etiology of vesical calculus, Dr. Pollak thinks it mainly due to the immoderate use of milk diet, especially sour milk, and to the use of sour, unripe fruit. Another cause may be the inordinate eating of rice, and it is less likely to occur in those who use a flesh diet and drink alcoholic wines. The fact that renal and vesical calculi are frequently found in the mountain sheep of Persia seems to favor the opinion of a purely vegetable diet being concerned in producing the disease. The greatest number of cases occur during early life: thus of 158 patients cut by Dr. Pollak, 69 were between the ages of 1 and 7 years; 53 between 8 and 14; 9 between 15 and 21; 16 between 21 and 50; and 11 above 50. The frequent occurrence of calculous disease in childhood is ascribed by the author to prolonged suckling, the usual period of lactation being two years, and often for a longer time.

The lateral operation was performed in 121 cases, of which only seven died. In two of the cases the wounds healed by the first intention, and the patients were discharged at the end of the sixth day. When the wounds united by granulation, the process was usually complete by the fourteenth or fifteenth day. Surgical fever was rarely seen, and there was never any occasion to restrict the diet after the third day. Only twice did he operate by the rectum, and then for small stones impacted in the prostate. Dr. Pollak always operated in the open air, never in a room, and almost invariably employed chloroform as an anæsthetic. In 147 cases he found but one calculus in the bladder; in one case there were six, in two cases four, and in eight cases two stones. Dr. Pollak ascribes the very favorable results of his operations to the following circumstances: 1st. The sound constitutions of the patients. 2d. The operations being invariably performed in the open air, and the after-treatment being conducted either out of doors or in a chamber with open doors and windows. 3d. The absence of erysipelas. 4th. Dressing the wounds with fine cotton instead of with charpie. 5th. His great experience in performing the operation.

Most of the calculi, which were exhibited to the Royal Society of Physicians of Vienna, were analyzed by Professor Kletzinsky, and were found to be composed of uric acid, oxalates, and triple phosphates.

IX.—*A Statistical View of Operations on the Tongue, and more Especially in Reference to their Danger from Hemorrhage.* By OTTO JUST, JR., M.D., of Zittau. (Schmidt's Jahrbücher, and London Medical Review, January. 1861.)

Dr. Just divides the different methods of removing the tongue into the following groups: A. *Operations with the knife.* 1. Amputation or partial excision. 2. Amputation by flap-incision, or wedge-like excision. 3. Total amputation or extirpation. B. *Ligature.* C. *Ecrasement lineaire.* D. *Cauterization.* 1. By the actual cautery, galvanocaustic. 2. By the potential cautery.

A. *Operations with the knife.* 1. *Amputation.*—Dr. Just has collected thirty-three cases of partial removal of the tongue for carcinoma, and sixteen for hypertrophy. To render the organ more accessible to the knife, as well as to ligature the vessels with more facility, it should be fixed by forceps, or by a stout ligature carried through its entire thickness. When the incisions have to extend toward the base of the tongue, on account of the small space we have to operate in, the procedure becomes more difficult and the arrest of hemorrhage is not so easy. In these cases more room can be gained by slitting open the cheek of the affected side, or by drawing out the tongue through an aperture in the neck, or by sawing through the symphysis of the lower jaw. These methods will, however, be unnecessary if the lingual arteries be previously ligated. 2. *Wedge-like excision.*—Under this head are mentioned twelve cases of cancer, one of telangiectasis, and eleven of hypertrophy. 3. *Extirpation.*—The author considers this operation justifiable when the whole of the tongue is diseased. Of three cases, one recovered.

Methods of stopping the hemorrhage.—The following means were employed for the arrest of hemorrhage, in sixty-two cases in which it is mentioned: In 29 cases, ligature of the vessels in the wound; in 2, ligature *en masse;* in 7, prophylactic ligature of the lingual artery; in 7, the actual cautery; in 6, ice and cold water; in 7, suture of the edges of the wound after flap-incision; in 3, styptics; in 1, bleeding spontaneously stopped. Ligature of the arteries in the wound is the safest method, and has never been followed, when employed alone, by secondary hemorrhage. The actual cautery, cold or styptics should be restricted to slight cases. Secondary hemorrhage ensued rather frequently when the actual cautery had been applied. Suture of the edges of the wound is unsafe, for in three-sevenths of the cases it was followed by secondary bleeding. Ligature of the lingual artery above the hyoid bone should only be resorted to when the base of the tongue is diseased and the mouth of large size; two of these cases died of pyæmia.

Period of recovery.—The most rapid recoveries took place when sutures had been used after excision of a wedge-shaped piece; in sixteen of these cases, fourteen united in from six to fourteen days. After amputation in general, it required from twelve days to four weeks. The cases treated by sawing through the symphysis took from one to two months.

Result.—Eight of sixty-eight cases terminated fatally, being 11¾ per cent. In five cases death resulted from pyæmia.

B. *Removal by ligature.*—Nineteen cases are quoted of ligature for cancer, and seven for hypertrophy; and two of these ended fatally, one from pyæmia, and one from poisoning by the offensive discharge. This method is troublesome and disgusting from the very fetid discharge, occasioning the patient great misery. Gangrene commences in about twenty-four hours after the application of the ligature, and on an average eleven days are required for the separation of the mass. The wound left after the detachment of the slough will heal generally in about fourteen days. Hemorrhage occurred in three instances, twice from too early a separation of the ligature, and once from the wound made for the passage of the thread.

C. *Amputation by means of écrasement lineaire.*—The écraseur has answered an excellent purpose in removal of the tongue, hemorrhage being effectually prevented when the instrument is made to act slowly. Twenty-one cases were treated by this method, and all recovered, the period of convalescence averaging three weeks.

D. *Amputation by means of the cautery.* 1. By the *galvanic cautery.*—Eight cases come under this head, hemorrhage attending four. The vessels required ligation in the wound twice, and once after previous ligation of the lingual artery. Secondary hemorrhage followed in about one-third of the cases. To prevent bleeding, the wire should be thick, the galvanic current weak, and the wire of the loops should not be heated beyond a black heat. 2. *Extirpation of the whole tongue by means of the potential cautery.*—One case only is given, in which the organ was destroyed by means of chloride of zinc.

The author has collected seventy-two cases of cancer of the tongue, in forty-nine of which the subjects were males, in twenty-three females; the frequency in males being pretty nearly in the ratio of five to two. In sixty-three cases the age is noted, showing that it occurs most frequently between forty and sixty years. In fifty-five cases the seat of the disease was, in seven, the tip of the tongue; in nine, the whole breadth of the organ; in nineteen, the right; and in twenty, the left side. In seventy-two cases there were eighteen recurrences; but the number is too small, as many of the cases were published soon after the operation.

To sum up the different methods of treatment, we find that the knife is especially adapted for removing small portions near the tip of the organ; the ligature has but one advantage, that of preventing hemorrhage, and the écraseur has shown more favorable results than those of the knife.

X.—*Cases of Trephining in Syphilitic Disease of the Bones of the Skull.* By HENRY LEE, F.R.C.S. (Beale's Archives of Medicine, No. 6, 1860.)

In cases of syphilitic disease of the bones of the skull, the outer and middle tables are alone generally carious or necrosed, or the internal table may undergo the same changes, without the external being similarly affected. In the latter case, however, the internal table is affected to a small extent only, and usually in spots where the outer plate has already perished, and it occasionally leads to effusions on the dura mater, which are confined by the outer tables.

When the internal table is diseased, the only means of preventing the progress of the malady is the removal of the carious or necrosed bone; and if but a small portion be taken away, the irritation of the membranes of the brain will be relieved in a marked degree. A prominent symptom in the cases quoted by Mr. Lee, an abstract of two of which we give below, was the extensive, persistent, and recurring ulceration of portions of the skin, occurring upon the side upon which the cranial bones were principally diseased.

Case I.—Mary B., aged twenty-four, stated, on her admission into the Lock Hospital, that, six years previously, she had contracted syphilis, followed by secondary symptoms. Six months ago, she noticed a soft swelling on her forehead, which gave way and denuded the bone. She was very weak, much emaciated, and unable to walk without assistance. A portion of the frontal bone, about three inches in diameter, was exposed and necrosed. Several nodes existed on the head, one of which had burst over the right parietal bone, and another over the anterior extremity of the saggital suture. There was an extensive ulcer under the chin and on the left side of the cheek, which had completely detached the lobe of the ear. She was unable to hear, except when spoken to very loudly, had lost the sense of smell, and the sensibility of the right side of the face, including the right half of the upper lip, was greatly impaired. On the twenty-ninth of February a node over the right clavicle discharged itself, exposing the bone, and on the fifth of March she could walk about the wards; but the ulcer on the neck was enlarging. Three days subsequently, the trephine was applied near the centre of the exposed frontal bone, and its entire thickness removed. The dura mater was opaque, but bled at a few points; the internal table of the bone was soft and vascular, much roughened, and presented a worm-eaten appearance. The middle and external plates had lost their vitality. From March ninth to March fourteenth, on walking, she had strabismus of the right eye, which lasted two or three hours. During the next month she gained flesh rapidly, the sensibility of the cheek had returned, the hearing was restored, the ulcers gave no pain, and she was able to walk about the garden. On the first of May the ulcer of the neck was healed, and up to July a slight numbness of the right half of the upper lip still remained.

Case II.—A tradesman presented himself to Mr. Lee in March, 1859, with an induration of the upper part of the root of the penis. Eight years previously, an ulcer appeared over the left eye, and at the same time the skin over the right elbow began to ulcerate. This extended, so as finally to involve the whole arm. Three years afterward he had a severe convulsive fit, and in 1857 it became evident that the cranial bones were affected. He was now seized with violent spasmodic contractions of the right side of the face, and four months later a second attack followed, lasting six hours and a half, and attended with partial paralysis of the right side of the body and tremor of the limbs. Subsequent to this, several milder attacks occurred. When admitted to the Lock Hospital, September 13th, 1860, the ulcer on the outer side of the right forearm still existed, the skin was firmly cicatrized from the shoulder to the wrist, with no motion in the elbow and wrist joints. The hand was œdematous, and the frontal and parietal bones were denuded in several places, and their outer tables extensively carious or necrosed. The trephine was applied on the twenty-fifth of October, at several points over the right parietal bone, and, where most diseased, the whole thickness of the bone removed. At other places, the outer and middle tables were alone removed. The dura mater bled freely, and was not covered by deposits, and the internal face of the bone was slightly eroded. On the fifth of November he had two fits similar to those before the operation, and three weeks later, another slight attack. From this time on to the twenty-third of December, when he was discharged, he had no more convulsions, the wounds of the scalp looked healthy, the ulcer of the arm had nearly healed, having been open between eight and nine years, and he had gained much in flesh and strength.

PATHOLOGY AND PRACTICE OF MEDICINE.

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I.—*Clinical Report on Pneumonia, based on an Analysis of* 133 *Cases.* By Austin Flint, M.D., Professor of Clinical Medicine and Pathology in the New Orleans School of Medicine, etc. (American Journal of the Medical Sciences, January, 1861, pp. 16–55.)

Professor Flint's clinical records, for the past twelve years, contain 133 cases of pneumonia, (exclusive of cases in which the patients were under five years of age,) 49 of which were observed in the Buffalo Hospital of the Sisters of Charity, (1848–1859;) 53 in the New Orleans Charity Hospital, (1858–9 and 1859–60;) 11 in the Louisville Marine Hospital, (1853–4 and 1855–6;) and 20 in private practice, (1851–1860,) mainly at Buffalo. The plan of analysis has reference to the ages, occupations, and habits of the patients, the circumstances connected with the causation of the disease, etc. Upon each of these points the statistics recorded by so reliable an authority on the subject of thoracic affections, are so well worthy of permanent record, that we here make an abstract of the valuable information which the paper contains.

I. *Age.*—Pneumonia has no predilections for any particular periods of life. The number of cases occurring at different ages is sufficient to show that no period of life is exempt from it.

II. *Sex.*—The male sex is much oftener affected than the female—of eighty cases in hospitals and private practice, but ten being females.

III. *Occupation.*—It is not produced directly by any particular occupation; occurs chiefly among persons whose callings involve muscular exertion and exposure to the weather. Occupation noted in eighty-seven cases, exclusive of female patients—fifty-two of these were laborers. Occupations of the remainder of a kind to involve, more or less, exposure to the weather.

IV. *Causation.*—It has no pathological connection with periodical fever. Other pulmonary affections do not predispose to it; some, as asthma, emphysema, and chronic pleurisy, appear to afford a protection against it; occurs, but not frequently, in those affected with organic disease of the heart; may be produced traumatically, by external injury, or the passage of a pistol-ball through the chest; not one of the secondary affections referable to degenerative disease of the kidney. May not infrequently be traced to some exciting cause, as unusual exposure to cold and wet, but generally occurs when no exciting cause is apparent; is oftener developed abruptly than in a gradual manner.

V. *Comparative frequency of cases of the disease at New Orleans, Louisville, and Buffalo.*—Cases not as numerous at Buffalo as at Louisville, and by far more frequent at New Orleans than in the other two places. At Buffalo cases occur in January, March, and April, much more frequently than at other parts of the year; at New Orleans, more numerous in November and December than in any other of the winter months; and of the comparatively few cases observed at Louisville, three-fourths occurred in January.

It would be interesting to see if these irruptions of pneumonia are connected with any uniform meteorological changes, but the data for such a comparison are not at present available. Still another fact leading to the conclusion that pneumonia is determined by external causes, is its occasional prevalence as an epidemic in southern and southwestern portions of our country, especially among the negro population.

VI. *Seat of the disease and extent of lung affected.*—Results in 121 cases show the almost invariable extension of the inflammation over at least a lobe of the lung; that the most frequent variety of lobar pneumonia is that in which the inflammation extends over the whole of the right lung, (37 cases.) This would not have been expected, and would not be the fact were it not for the tendency of the disease to extend over the whole of the right lung being greater in New Orleans and Louisville than in Buffalo. Next in order of frequency is that variety in which the lower lobe of the right lung is alone affected, (29 cases.) And at Buffalo the latter is the most frequent variety.

These results, however, show that the cases in which the disease is limited to the lower lobe of the left lung, (25 cases,) are nearly as numerous as those in which the lower lobe of the right lung is alone affected. This would not have been expected, the common belief being that the lower lobe of the right lung is much oftener the seat of pneumonia. Inflammation seated primarily in the lower lobe of the left lung rarely extends over the whole of that lung, (9 cases.) The lower lobes of both lungs (double pneumonia) are rarely affected, (7 cases.)

Pneumonia very rarely attacks primarily the upper lobes, and oftener the upper lobe of the right (8 cases) than the upper lobe of the left lung, (3 cases.) When the whole of either lung is affected, the liability of extension of the disease to the opposite lung is excessively small.

VII. *Complications of Pneumonia, and the Occurrence of Gangrene and Abscess.*—1. *Pericarditis and Delirium Tremens* were complications oftenest observed, each occurring in 8 out of 133 cases. The latter is simply a superadded affection, generally attributable in part, or entirely, to discontinuance or diminished use of alcohol after the attack of pneumonia. Six of the eight cases of pericarditis and three of the eight cases of delirium tremens were fatal. These results show the gravity of pneumonia complicated with pericarditis, but recovery may take place even when, in addition, the inflammation of the lung eventuates in abscess.

Exclusive of pericarditis and delirium tremens, complications of pneumonia are by no means common—a remark applicable to New Orleans, Louisville, and

Buffalo; but complications exist more often at New Orleans and Louisville than at Buffalo, and consequently greater gravity of the disease.

2. *Gangrene and Abscess.*—In four cases existence of abscess was ascertained; may have existed in some fatal cases in which it was undetermined, the bodies not being examined after death. The pneumonia eventuated in gangrene of the lungs in one case only.

VIII. *Fatality and Duration.* 1. *Fatality.*—In 133 cases there were 35 deaths, a fatality of a fraction over 26 per cent. Proportion of fatal cases considerably larger at New Orleans and Louisville than at Buffalo, the ratio being, at the latter place, a fraction over 17 per cent.; at New Orleans, a fraction over 32 per cent.; and at Louisville, a fraction over 63 per cent. Of the 35 fatal cases 16 were either complicated or associated with other important affections.

The proportionate fatality in uncomplicated cases was 19 in 112, or a fraction under 17 per cent. Pneumonia uncomplicated and not associated with any other important affection, if limited to one lobe, is not a disease dangerous to life, since there were but two examples among the 133 cases analyzed.

Under this head arise four questions:—

a. Of complicated cases what proportion were fatal?—Of the whole number in which other affections became developed in the course of the pneumonia, (21,) 11 were fatal. Of 7 cases in which pulmonary tubercles coexisted, recovery took place in all save one.

b. In how large a proportion of cases in which inflammation extended over more than one lobe did death take place?—Of 11 cases of double pneumonia, the number of deaths was 8; of 57 in which it extended over two or more lobes, 19 died, the proportion being exactly one-third. The fatality is thus seen to be greatest in double pneumonia. Next in order are cases in which the whole of the right lung is affected. The fatality is strikingly less when the whole of the left lung is affected, being only as one to nine.

c. Does age exert any influence on the fatality of this disease?—In the largest number of cases in the whole collection the ages were between 20 and 30, while in the largest number of fatal cases they were between 30 and 40. Age does exert an influence on the fatality, the liability to a fatal result being greater in proportion as patients approach the age of sixty—this collection containing no examples of a greater age than sixty years.

d. Does intemperance exert an influence on the fatality?—It is probably true that habits of drinking were noticed in a larger proportion of the cases in which they existed, than the absence of these habits in the cases in which the patients were temperate. Hence the results do not fairly exhibit the influence of intemperance.

2. *Duration.*—In 30 cases the shortest duration from the date of the attack to the time when the patient could be pronounced convalescent was 5 days, and the longest 23 days. The mean duration was a fraction over 12 days.

In 14 of the fatal cases the shortest duration from the date of the attack to the time of death was 3 days, and the longest 20 days. The mean duration was a fraction over 10 days.

The duration in hospital cases, from the date of admission to the time of discharge, varied from 4 to 70 days. The length of stay in hospital, however, in a series of cases, does not show the length of time that the patient was necessarily detained by the disease.

IX. *Treatment.*—The objects of treatment have been the palliation of symptoms, placing the system in a condition of tolerance as regards the disturbance caused by the local affection, and sustaining the vital powers so as to obviate a tendency to death by asthenia or exhaustion, and to promote a speedy and complete recovery.

1. *Points of inquiry in regard to treatment.*—The proportionate fatality in cases in which different therapeutical measures were employed, the duration of the disease in cases differently treated, the immediate apparent effects of remedies, the almost impracticability of arresting pneumonia, and its intrinsic tendency to death or recovery, when left to itself—*i.e.* without treatment.

2. *Progress without treatment.*—A few cases in this collection illustrate the favorable progress of the disease and recovery without medical treatment, and even under most unfavorable hygienic circumstances. Recovery, favorable progress of the disease, and a brief duration, even if an entire lung be affected, do not necessarily constitute evidence of the curative efficacy of any plan of treatment which may have been pursued.

But, on the other hand, taking into view the fact that in only two cases in which the disease was uncomplicated and limited to a single lobe, did it prove fatal, a considerable number of fatal cases, when no important complication existed, and the disease did not extend to two or more lobes, should be considered as furnishing good grounds to suspect that the treatment pursued contributed to the fatality.

3. *Remedial measures. a. Blood-letting.*—So far as any conclusions are admissible from the facts, they show that bleeding did not prevent extension of the disease to the entire lung, which occurred in 5 of the 12 cases; nor the affection of the lower lobes of both lungs, which occurred in 1 case; nor the development of delirium tremens, which occurred in 1 case; nor pericarditis in 1 case.

It did not diminish the fatality, which was at the rate of 36 per cent., being considerably larger than the rate in all the cases, (26 per cent.;) much larger than that at Buffalo, (17 per cent.;) somewhat larger than at New Orleans, (32 per cent.;) but falling below the rate at Louisville, (63 per cent.)

The analysis of cases in which blood-letting was employed furnishes no evidence that this measure affected, either favorably or unfavorably, the progress of the disease. In some of the cases it appeared to afford relief.

The longest duration of these cases, from the date of the attack to convalescence, was 30 days; and the next longest 15 days. The shortest duration was 9 days, and the next shortest 11 days. The mean duration was a fraction under 15 days. The mean duration of stay in hospital was a fraction under 25 days. The average duration from the attack to convalescence is exactly the same as in the aggregate of the other cases mentioned here, viz., a fraction over 12 days.

b. Tartar emetic was prescribed in 12 cases, in small doses, (gr. $\frac{1}{16}$ or $\frac{1}{8}$,) and nearly always given in conjunction with opium or the sulphate of morphia in small doses. Palliation of certain symptoms was alone looked for through its sedative influence on the circulation and nervous system. It is fair to presume that the antimony exerted in several cases a certain amount of palliative influence. It was not given under circumstances likely to render a depressing remedy injurious, either directly or indirectly, by conflicting with supporting measures.

c. *Sulphate of quinia* entered more or less into the treatment in 32 cases; in 9 in doses of gr. ij, three times daily, generally in conjunction with opium in small doses, brandy, and sometimes carbonate of ammonia; in nearly all of the remaining 23 cases, in doses of gr. v, three times daily, continued for a variable period. Of the 23 cases, 3 only were fatal; all those which recovered, save 3, were uncomplicated, and the inflammation was limited to a single lobe in all the other cases save one.

It is doubtful whether any inference is to be drawn from the fatality, except that the sulphate of quinia did not exert an unfavorable influence on the termination of the disease. The immediate apparent effects were, in several instances, favorable in a marked degree; the pulse, in several cases, diminished in frequency notably under its use, a corresponding reduction in the frequency of the inspirations sometimes taking place and sometimes not.

d. *Opium.*—Opiates entered more or less into the treatment in 100 cases, and were either the only, or the most important, remedy in 49. In 46 of these 49 cases, the sulphate of morphia was given in doses of gr. ¼ or upwards, or opium in doses of gr. ij or upwards, every 4 or 6 hours. Of the 46 cases treated with full doses of opium, 11 were fatal, a fraction over 23 per cent. This is somewhat under the fatality, in the whole number of cases analyzed, which was a fraction over 26 per cent.

So far as any conclusion from the fatality is admissible, it is certainly favorable to the treatment of the disease with full doses of opium, as compared with other methods of treatment pursued in the cases collected by Dr. Flint. Among the cases treated with full doses of opium, ending in recovery, in 12 the inflammation extended over a whole lung, or 30 per cent.; while the proportion in 110 cases treated by different methods, and including fatal cases as well as those which recovered, was only a fraction over 31 per cent.

Full doses of opium, however, do not afford a protection against the extension of the disease beyond a single lobe. In 22 of the 35 cases of recovery, the mean duration was a fraction over 11 days.

In the cases in which other remedies were added, (excepting alcoholic stimulants,) they were subordinate to the opium treatment. Dr. Flint has never observed more than slight narcotism produced by large quantities of the remedy, when judiciously given, a fact which shows that pneumonia involves tolerance of full doses of opium.

e. *Alcoholic stimulants*, given more or less freely, and continued for a greater or less period during the progress of pneumonia, produced no apparent unfavorable effects. The facts show that, given in conjunction with opium and nutritious diet, they affect favorably the progress of the disease and diminish its fatality, and are not contraindicated by the coexistence of pericarditis or organic disease of the heart.

In conclusion, it has been recently stated that the chlorides disappear from the urine during the progress of the exudation in pneumonia, and reappear so soon as the exudation ceases. Hence, it is considered by some that the absence of chlorides is evidence that the inflammation is extending; while, on the other hand, their reappearance is a test that the inflammation has reached the limit of its extension. The conclusions arrived at by Dr. Flint, from the examination of eleven cases, are, that the absence of the chlorides may be considered as evidence that the exudation is going on, but the presence of the chlorides does not constitute conclusive evidence that exudation is not going on.

II.—*The Last Sickness of General Washington, and its Treatment by the Attendant Physicians.* By JAMES JACKSON, M.D.

Attached to the Life of Washington, by Mr. Everett, is a memoir, drawn up by Dr. James Jackson, of Boston, upon the last illness of that distinguished man. In the language of the writer, "the circumstances of his short disease, its character viewed scientifically, and the treatment adopted by his physicians, have all been ascertained and discussed; and the remedies employed have been spoken of by some persons in terms of strong reprobation."

Though complaining of sore-throat and hoarseness on the 12th of December, 1799, it was not until the following night that the symptoms of Washington's illness became severe. He then had a chill, followed by great difficulty in breathing, speaking, and swallowing, symptoms which continued until the following night, that of his death. The breathing caused him most distress; the more because his strongest efforts were insufficient to supply his lungs with as much air as his system had need of. He was in fact strangulated by the closure of the windpipe, as much as if a tight cord had been twisted around his neck.

Acute laryngitis is rare; it had not, at the time of Washington's death, been clearly described, so as to be distinguished from other diseases about the throat. About 1810 it was first brought into notice, and distinctly described by Dr. Matthew Baillie, of London. After detailing for the popular understanding pathological changes occurring during an attack of acute laryngitis, the causes of obstruction of the upper parts of the respiratory and digestive apparatus, and the mode of death, Dr. Jackson proceeds to consider the treatment of this alarming affection.

It has been thought by many persons, medical and non-medical, that General Washington was not treated judiciously; and some, perhaps, believe that, by a different treatment, his life might have been preserved. He was bled, he was blistered, and calomel and antimony were administered internally. The best teachers at the present day recommend bleeding and blistering. In addition, the English teachers advise the use of mercurials carried to the point of salivation, and our own did the same until very lately. Some of them, perhaps, do it now. Some, if not many, would add antimony and opium to the calomel, or other preparations of mercury.

The chance of success of blood-letting in acute laryngitis is great in the very beginning of the inflammatory process; but it is less the later the period at which the remedy is employed. There is not, however, any other measure by which effectual relief is so likely to be produced. But who would advise the active treatment requisite for this purpose in every case of a *hoarse cold*, which is the first stage? There is no doubt that every discreet man would choose to incur the slight hazard of the severe disease, rather than resort to a copious bleeding every time he had a hoarse sore-throat.

In Washington's case, the first stage was of short duration. Bleeding was resorted to early, by his own direction. But that bleeding was nominal. His wife objected to it, because the patient was old, and it had not been prescribed by a physician. When Dr. Craik reached him, some hours afterward, he prescribed a new venesection. Calomel and antimony were given him, but there is not any reason to believe that they were given in large doses; though Dr. Craik and his coadjutors have been reproached on this score. In 1799 the use of mercurials in inflammatory diseases was very rare in Great Britain, though it was very common in this country. At the present day, the reverse is true.

We fully concur with Dr. Jackson in his defense of the reputation of Dr. Craik and his medical friends, that they did as well, at least, as any of their critics would have done in the like case.

III.—1. *Observations on Favus.*—By WILLIAM PIRRIE, JR., M.D., late Assistant Surgeon H. M.'s 71st Highland Light Infantry. (London Lancet, Dec. 15, 1860.)

2. *A Clinical Report on True Ring-worm, (Tinea Tonsurans.)* By JONATHAN HUTCHINSON, Surgeon to the Metropolitan Free Hospital, etc. (Medical Times and Gazette, Jan. 12, 1861.)

By an opportune coincidence, two of the English journals contain investigations into the nature and history of two forms of cutaneous disease, from which we abstract the following conclusions:—

FAVUS.

1. Favus is essentially characterized by the presence of a fungus, which is easily discovered by the microscope.
2. It is peculiar to the young, and confined to the poor and destitute.
3. It is most commonly met with on the scalp, but occasionally on other parts of the body.
4. The hair follicles are only secondarily affected.
5. It is by no means a rare disease in Scotland, being exceedingly common in Edinburgh, and having been more so for several years past in Aberdeen than in Glasgow.
6. It is generally considered more common in Ireland than in England.

TINEA TONSURANS.

1. True ring-worm, or tinea tonsurans, may be defined as a disease affecting either the scalp or the general surface, in which circular patches are formed, on which the hairs break off short, and a slight branny desquamation is seen, both hairs and epidermic scales exhibiting under the microscope the sporules and thalli of a fungus.
2. Ring-worm on the scalp is rarely seen, excepting in children; but on the general surface is not very unfrequent in young adults.
3. It is contagious, and spreads by contagion only.
4. It is not attended by any particular form of dyscrasia, but, on the con-

7. It is a blood disorder, and the fungus is not the sole nor the original cause of the eruption.

8. Many are unsusceptible to it; it is feebly contagious, and very often arises independently of contagion.

9. The previous state of health has an important bearing on its outbreak.

10. It is intimately connected with the strumous diathesis.

11. Want of cleanliness strongly predisposes to it.

12. For its removal, general as well as local treatment is necessary.

trary, often attacks children in perfect health.

5. It is much more easily curable on the general surface than on the scalp, owing to the circumstance, that in the latter situation the fungus has obtained access to the follicles of the hairs.

6. Being a purely local disease, ring-worm does not require, *per se*, any constitutional treatment.

7. A purely local treatment, if efficiently pursued, is always and rapidly successful.

8. Epilation, and the use of one or other of the known parasiticides, are the measures of treatment required.

9. There is no real difference between ring-worm on the scalp and ring-worm on the general surface.

10. Ring-worm, although not unfrequently causing minute vesicles, has no true analogy with herpes.

IV.—*Patency of the Foramen Ovale of the Heart Producing Two Opposite Classes of Symptoms.* A Lecture delivered at the Grosvenor Place School of Medicine. By DR. RICHARDSON. (Medical Times and Gazette, December 22, 1860, p. 605.)

The history of a case of cyanosis, complicated with tubercular disease of the lungs, in a child five years of age, afforded Dr. Richardson an opportunity of discussing the pathology of the affection. After death consequent on symptoms of asphyxia, terribly labored breathing, and marble coldness of surface, he detected three abnormal conditions, viz.: 1. Each lung was literally charged with tubercles of the size of millet-seeds, which did not involve any neighboring structures in purulent degeneration. 2. The blood was fluid, but of a dark, venous color, both in the venous and arterial side of the circulation. 3. The heart was enlarged on the left side, the right auricle distended, the right ventricle small, the left auricle a little smaller than natural, the left ventricle large; the original foramen ovale in the septum auriculorum was split into three openings.

The foramen ovale is thus left open, on account of the deficient formation of the membrane, which, after birth, ascends from the lower margin of the foramen and closes up, in the majority of cases, the foramen altogether; and for the first few days of life the circulation is carried on normally with a distinct opening between the auricles. The continuance of the patency is owing, in cyanosis, to the persistence of the current of blood from the right to the left auricle, due to a constant obstruction in the lungs. Death, in cyanosis, ordinarily occurs from pulmonary congestion, cyanotic patients being almost exempt from inflammatory disorders, though suffering readily from every depressing influence. In the present case the tubercular deposit can scarcely be attributed directly to the cyanosis; yet the activity of the phthisical symptoms was modified by the cyanotic state, the hectic suppressed, and the local development of inflammatory products around the tubercular masses prevented. The heart sounds, as usual, were normal.

Arterial blood may pass from the left auricle into the right, as is described in several cases given by Dr. Richardson. In one, described by Dr. Mayne in the Dublin Journal for 1848, the skin was pale, not blue, moist constantly, not dry and cold. Exercise produced embarrassment and even death; and the mental faculties were reduced to the lowest possible manifestation. In Dr. Richardson's case, the brain, fed always with blood largely impure, was active; in Dr. Mayne's case, the brain, fed always with arterial blood, was inert. No venous blood found its way into the arterial capillaries; hence cyanosis was absent.

The left ventricle being small and the aorta contracted, and the right ventricle large and the pulmonary arteries and veins dilated, there was always a small systemic with a great pulmonic current. While the patient received no excess of oxygen, the blood in the lungs only being capable of taking up a certain amount, she must have exhaled at all times a minimum quantity of carbonic acid; and hence those systemic changes leading to the formation of carbonic acid, and so essential to healthy nutrition, being suppressed, languor and depression were always present. Embarrassed breathing, sometimes occurring, would be referable to the temporary congestion of the lungs, which ensued whenever the right side of the heart was stimulated to undue activity.

Two opposite classes of symptoms are thus seen to arise from the same structural deficiency.

V.—*Diphtheria; its Nature and Treatment, with an Account of the History of its Prevalence in various Countries.* By Daniel Denison Slade, M.D., of Boston, Massachusetts. The Dissertation to which the Fiske Fund Prize was awarded, July 11, 1860. (American Journal of the Medical Sciences, January, 1861, pp. 145–174, and 301–326.)

We have already furnished an abstract of one important paper from the pages of the American Journal, and we now make an analysis of another, which is a carefully prepared digest of the principal points in relation to diphtheria. After giving Bretonneau's description of the disease, that "nothing is diphtheria that is not a pellicular exudation, no such exudation is diphtherical which is not capable of acting as a virus or contagion," Dr. Slade remarks that it is only by a comparison of the various epidemics of "sore-throat" which have prevailed at intervals in various parts of the world, that we can ascertain how far Bretonneau's description is to be taken as a model of the disease. He therefore gives an account of those which had prevailed in various parts of Europe, and compares the descriptions of different writers upon these epidemics with that of Bretonneau, and then shows that the latter was incorrect in denying the presence of all constitutional disturbance, as also in insisting upon the absence of all relation between diphtheria and gangrene of the fauces—both of these conditions having been frequently observed, particularly during the epidemics of late years.

Bretonneau's idea of croup, which he associates with diphtheria, does not conform to the present views of that disease, founded as they are upon the description given by Dr. Home.* The distinctions between diphtheria and croup are dwelt upon, as also the non-identity of diphtheria and scarlatina.

A comparison of the descriptions of the disease by various writers, as it appeared in the several counties of England, gives no marked uniformity, and but little correspondence with Bretonneau's model. Dr. Slade then considers diphtheria in America, and gives at some length a description of an epidemic of "sore-throat," by Dr. Bard, also an account of the epidemics in California and other parts of the Union. All these epidemics of "sore-throat" are connected by a bond of union to be found in the pathological anatomy of the disease, which consists in the peculiar exudation.

Although Bretonneau fully recognized this fact, his description was deficient; therefore those of MM. Barthez and Rilliet are subjoined as being more comprehensive. The disease is also considered as existing under two forms, the mild and severe.

The nature of the disease is then taken up; first, the characteristics of the false membrane, its physical appearance, its seat, the experiments of Bretonneau in order to ascertain the specific nature of the diphtheritic membrane, its microscopic appearances, and its dependence upon certain parasites.

Is diphtheria infectious? Having given the arguments of various authors, Dr. Slade replies, that although we are ignorant of the exact laws which governed these epidemics, we *could* find certain hygienic or individual circumstances which undoubtedly had their effect, either as direct or as predisposing causes. He thinks further observation necessary before ascribing any settled prognostic value to the presence of albumen in the urine. He then refers to after-effects of the disease, especially upon the nervous system.

It is only within the last few years that anything like unanimity in the treatment of diphtheria has prevailed. It is now universally considered as an asthenic disease, and consequently will bear no depletory measures, but, on the contrary, requires tonics, stimulants, and a nourishing diet, even in the early stages. Blisters, leeches, and local bleedings of any sort should be prohibited. The tonics best suited are enumerated. The auxiliary measures first spoken of are the local applications to the fauces; their utility and propriety, and the various agents which have been employed, and the mode of using them are referred to. The ablation of the tonsils recommended by Bouchut is inadmissible, excepting under rare circumstances.

Tracheotomy is discussed at considerable length. Remarking that the two diseases, inflammatory croup and diphtheria, were on an equal footing as regards the applicability of the operation; the various objections brought against it, as the small amount of success, the difficulties of performing it, the tendency to the production of bronchitis, etc., are all considered and answered. The proper time for performing the operation is decided to be an intermediate period. Some necessary rules are given as to the size of the canula, the state of the surrounding atmosphere, the importance of having some competent person at hand in case of emergency, the propriety of keeping up the medical treatment, and the time for removing the canula.

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* Inquiry into the Nature, Cause, and Cure of the Croup. Edinburgh, 1765.

Having given a summary of the treatment recommended by some of the leading men in Europe, the article concludes by a brief consideration of the operation for "tubing the larynx."

VI.—*Acute Pericarditis with Effusion; Recovery with Adhesion of the two Surfaces of the Pericardium; Absence of any Rheumatic Affection.* A Case in King's College Hospital, under the care of Dr. Beale. (Archives of Medicine, No. 6, 1860.)

It is very rare to meet with cases of acute pericarditis with effusion occurring independently of rheumatic fever. In a case in the medical ward of King's College Hospital the attack appears to have originated in a cold from exposure; but throughout the whole course of the malady there was no indication of rheumatic affection. All the symptoms from which he suffered appear referable to the heart affection. The amount of the effusion in the pericardium was very great. The œdema of the legs depended probably upon an impediment to the return of blood to the heart, created by the pressure exerted by the distended pericardium.

The treatment resorted to consisted chiefly of counter-irritation by turpentine stupes, linseed-meal poultices over the heart, ammonia and chloric ether, with a moderate quantity of brandy, (two to four ounces in twenty-four hours.) Had the patient been very restless, opium would have been given, and mercurial ointment would have been rubbed in over the heart; but as he was carefully watched from day to day, it was evident that he was progressing as satisfactorily as could be expected, and it was therefore thought better to adhere to the treatment above described, believing that the fluid would be gradually absorbed, if the patient's strength and nutrition were properly kept up. This man was under treatment less than four weeks, and the whole of the fluid effused into the pericardium, which at one time must have been very considerable, was probably reabsorbed.

The most favorable result which could be hoped for in such a case, the adhesion of the two surfaces of the pericardium, certainly occurred. The man left the hospital; but about three weeks afterward, in consequence probably of want of care on the patient's part, the effusion reappeared and the pericardium was again distended to its former size. The fluid was again absorbed under the influence of mercurial inunction, and the patient left the hospital a second time. He still suffers from great difficulty of breathing, his pulse is weak, very quick and fluttering, and he is quite unable to work.

OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

BY WM. B. ATKINSON, M.D.,

LECTURER ON OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

I.—*Placenta Prœvia.* By T. GAILLARD THOMAS, M.D., of New York.

After a careful resumé of the history, varieties, mortality, etc. of the subject under consideration, Dr. Thomas speaks of the "indications for treatment." These are to deliver the child as soon as possible, and thus prevent the necessity for *gradual* dilatation of the os and cervix; or to alter the state of affairs at the cervix so that gradual dilatation may go on without producing hemorrhage.

The methods of treatment are version; partial separation of the placenta; complete separation of the placenta; rupture of the membranes; the tampon, if forced to wait.

He supposes two cases, the first of a grave character. Here, where the hemorrhage is serious, delivery must be accomplished as soon as possible. If the patient's strength be sufficient to bear the operation, the child be living, and the os uteri dilatable, turn without delay.

If the exhausted state of the patient, or the death of the child render the operation too hazardous, or in the latter case useless for the safety of the child, a portion or the whole of the placenta may be separated; a part, if sufficient, the whole otherwise.

If a rigid os prevents turning, and the child be living, if the woman could bear a further loss, it would be well to await the time when dilatation will occur before separating the placenta, and thus destroying the fœtus. While waiting, danger may be avoided, and the process hastened by partially separating the placenta and placing a sponge saturated with a solution of perchloride of iron against the os, and keeping it there by filling the vagina with a tampon, which, in itself, accomplishes both objects. Better still, the colpeurynter might be used, or a bladder tied to the end of a self-supplying syringe, introduced into the vagina in a collapsed state, and then filled with water. This, however, is but temporizing, and it is seen that the principles of treatment are narrowed down to immediate delivery; waiting until the state of the parts will allow it; or altering the state of affairs at the outlet of the womb so that the natural expulsion of the child may occur without danger.

In certain cases it is necessary to decide between complete separation of the placenta and version.

The latter is preferable—

When the child is living; at full time; when the patient's strength is good; when the soft parts are dilatable; when the pelvis is not deformed; in multiparæ.

The former is preferable—

When the child is dead; before full term; when the patient is exhausted; when the soft parts are rigid; when the pelvis is deformed; in primiparæ; during an epidemic of puerperal fever.

It has been objected to separation of the placenta in cases where the soft parts are rigid, that if the hand can be introduced for that procedure, version would be practicable. But, in certain cases, two fingers will suffice to detach the placenta, and even if it required the whole hand it would be much less dangerous to stretch a doubtful os for its admission to the wrist, than for the introduction of the entire forearm and subsequent extraction of the child.

Few points in obstetrics require a greater amount of judgment in their decision than the period at which version should be performed in placenta prævia; for on the one hand, if it be performed too soon, a laceration of the unyielding os may occur, and the woman be exposed to the great risks of post-partum loss from the immensely developed vessels at the placental site, as well as to those imminent ones of phlebitis; while on the other, if too long delayed, her forces will become so exhausted that the shock of the operation will produce death.

It is a very prevalent error that, whenever version is called for by the loss of blood, this loss will itself render the parts dilatable.

He next supposes a case unaccompanied by grave symptoms. When the hemorrhage is slight, the obstetrician may resort to minor means at first. Thus, if the placenta is placed laterally, the membranes may be ruptured in the hope that pressure from the presenting part may check the flow. Should this fail, we may employ Barnes's method of detaching by the finger, only that part of the placenta attached to the cervix, and leaving that attached above this point still adherent. Thus is accomplished at once the separation of all that must necessarily occur to permit the passage of the child; succeeding uterine efforts do not affect that portion attached to the body; and tonic contraction of the uterus closes the open vessels of that organ, while coagula do the same for those of the placenta. After which, should the flow continue so as to require aid, version should be resorted to under the restrictions just mentioned; or if the head is within reach of the forceps, they should be employed. If it be impossible to introduce the fingers into the os for the performance of Barnes's method, the vagina should be plugged until the parts are in the proper condition.

Should the placenta be directly in front so as to preclude the determination of the position of the child by the touch, endeavor to ascertain by palpation and auscultation. If forced to turn without knowing the position, always employ the *left hand*, as the occiput is much more commonly to the left acetabulum, and that hand would be applicable to such a case. Do not waste time in breaking through the placenta, but pass the hand between it and the uterus. He sums up as follows: 1st. Os dilatable and woman not exhausted, deliver immediately by version or the forceps. 2d. Os dilatable and woman exhausted, detach a part or the whole of the placenta; apply styptics, and stimulate. 3d. Os rigid and woman not exhausted, detach the portion of the placenta nearest the cervix, and, if necessary, apply styptics and tampon, or colpeurynter. 4th. Os rigid and woman exhausted, detach part or whole of the placenta, apply sponge saturated with perchloride of iron, and support strength by stimulants.—(*Amer. Med. Times*, Jan. 19, 1861.)

II.—*A New Sign of Post Partum Detachment of the Placenta.* By JOHN CLAY, M.R.C.S., of Birmingham.

From investigations, with a view of improving upon the old plan of management of the delivery of the placenta, Dr. Clay ascertained that a very simple sign existed, by which its separation, after the birth of the child, might be indicated, having tested it in upwards of nine hundred cases. Before dividing the umbilical cord he applies two ligatures. If the maternal part is now examined, it will be found in a flaccid condition, and almost free from blood; but after an interval of from one to three minutes, it will be found to have acquired specific weight, and that the vessels are more or less filled with blood. The one fact may be ascertained by poising the cord on the fingers; the other by slightly grasping the cord near the vagina, with the thumb and forefinger of the left hand, and, with the right hand, suddenly compressing it, when a well-marked sense of fluctuation is perceived, a kind of resilience like that felt when an elastic tube filled with fluid is suddenly compressed. When the placenta is detached, the cord loses its increased specific weight and the hydrostatic property just mentioned. This is so invariable, that *the loss of the previously acquired hydrostatic properties of the cord after the birth of the child constitutes the sign of detachment.*

The whole of the phenomena are manifested in three stages—flaccidity, repletion, flaccidity.

If the cord be tightly grasped by a spasm of the os, or by irregular contractions of the uterus, the *loss* of the hydrostatic properties may for a short time be delayed. These signs are not, of course, equally marked in every case. When the uterus is flaccid, they are but slightly manifested, though perfectly reliable. When, on the other hand, the contraction is firm, the most inexperienced may detect them. In cases of partially adherent placenta, the disappearance of the hydrostatic properties, and the failure to deliver the placenta by the usual manipulations, indicate the necessity for artificial detachment by introducing the hand. In twin cases, the signs persist till after the birth of the second child, except where two placentæ are present.

It sometimes occurs that the placenta is separated simultaneously with the birth of the child. Here the first series of phenomena are absent, and it may be prudent to wait before proceeding to extract the placenta, although it may be generally effected with safety.

The practical value of these facts is obvious, as the placenta, when thus known to be separated, may be at once extracted. The prompt delivery of the placenta is very important, as the uterus then contracts more efficiently, the risk of hemorrhage is not so great, and it may be fairly assumed that the convalescence is less protracted.

To inexperienced practitioners it might be a safe instruction to impart, not to interfere in the extraction of the placenta so long as the hydrostatic properties herein defined are persistent.—(*Dub. Quar. Jour.*, November, 1860.)

III.—*Sub-Involution of the Uterus after Delivery.* By J. Y. SIMPSON, M.D., of Edinburgh.

After relating two cases of the affection, Dr. Simpson spoke of its pathology. In these cases, the retrograde metamorphosis of the uterus, which is natural after labor, has not taken place, or so imperfectly that it has but slightly diminished in size.

There is here a hypertrophy which is pathological only in its permanency. This is generally the result of rising too soon after confinement, repeated miscarriages, or metritis. Its symptoms are a feeling of discomfort in the abdomen, a bearing-down, distress in connection with the bladder and rectum, pain in the lower part of the back, sometimes numbness of the lower limbs. The menses do not return regularly, or are profuse and painful, and leucorrhœa to a greater or less extent is present.

The diagnosis is made out by passing the hand over the abdomen, when the enlarged uterus is felt like a tumor rising out of the pelvic cavity, and by a vaginal examination, the cervix is found to be enlarged, and the whole organ unusually large and heavy. It is of importance here to examine with *both* hands simultaneously, the forefinger of one hand exploring by the vagina, while those of the other are applied to the anterior abdominal wall. With the uterus thus between the hands, the hypertrophy is easily recognized, and the absence of fibroid masses in the walls is known by the regularity in shape of the organ. But as there might yet be a fibroid tumor in the submucous layers of the uterine walls, the sound must be introduced. This should penetrate two and a half inches; but when the uterus is enlarged it may enter much farther. If a tumor be present, an obstruction is met with, which may require some dexterity to pass. As the great weight of the organ, aided by inflammatory adhesions, may cause displacement, as retroflexion, etc., these must be expected; and when an obstruction occurs, the sound may be passed by turning its concavity backward, when it will enter deeper if a retroflexion is present.

The affection may be detected within a few weeks or months after delivery. These are the acute types, but, generally, many months or even years may elapse before the physician is consulted. It will vary in degree from a slight hypertrophy to the normal state of a fully pregnant womb.

In the acute form it should be treated by local antiphlogistics, which cause absorption to set up. If the patient is not debilitated, leeches should be applied to the vaginal portion of the uterus, the perineum, or circle of the anus. In chronic cases, counter-irritants must be applied to the surface of the sacrum or abdomen, as antimonial or croton ointments, tincture of iodine, or blisters. A series of small blistering-plasters may be applied over the lower part of the abdomen, as one every second or third day. At the same time the vaginal portion of the cervix should be kept immersed in ointments of mercury, or iodide of lead, or bromide of potassium, as by means of medicated pessaries.

When these are not sufficient to effect a cure, deobstruent remedies may be given internally; the most efficacious are iodide or bromide of potassium. The latter has the advantage that it may be kept up for a long time without any bad effects, and is also an excellent tonic. The dose should be large, as six, eight, or ten grains three times a day. When the patient is much debilitated, it is best to add iron, manganese, etc. Some cases are very obstinate, and require a long continuance of the treatment. If, however, the uterus could be induced to *increase* in growth, it may be confidently hoped that this will be followed by a decrease and the return of the organ to its normal dimensions. This transient increase may be produced by the introduction of a sponge tent, etc. Then, having caused the uterus to take on hypertrophic action, by actively following it up by the remedies as above, a cure is effected. In some obstinate instances, Dr. Simpson has been obliged to repeat, from time to time, this process of artificial irritation and dilatation before a perfect cure resulted.—(*Med. Times and Gaz.*, Jan. 5, 1861.)

IV.—*Glycerin and Camphor in Suppression of the Secretion of Milk.* By DR. JURIAH HARRISS, of Savannah, Georgia.

Having carefully tried belladonna in cases where the suppression of the lacteal secretion became necessary, Dr. Harriss has arrived at the conclusion that it too often is without profit to the patient. He usually prescribes a saturated solution of camphor in glycerin, to be gently applied over the surface of the mammæ with a flannel cloth; this to be renewed several times a day.

Camphor is freely soluble in glycerin, and by the combination the effect of the former is obtained, while the latter protects the breast from the air. In sore nipples also, this has proved very useful, though he generally adds four grains of tannin to an ounce of the mixture.

The next best remedy to arrest threatened abscess, is the application of adhesive plaster over the whole gland, fitting it closely and leaving a hole for the nipple. We thus compress and support the gland, and officious meddling by friction is prevented and rest secured.—(*Savannah Jour. of Med.*, Nov. 1860.)

V.—*The Pessary a Hurtful Remedial Agent.* By DR. W. M. TURNER, of Petersburg, Virginia.

The only cases in which Dr. Turner regards the pessary as proper, are those in which *complete* prolapsus has occurred, the ligaments being so lax as to permit the uterus to protrude through the genital fissures. Even here, he regards it as exchanging vaginitis for metritis. His objections to this instrument are that it presses on the vagina and occasions inflammation and ulceration, often resulting in fistulæ; it is unsound curative practice to treat effect instead of cause; or rather it is far better to give tone to the ligaments of the uterus and vagina; the inconvenience arising from the adjustment of the pessary, getting the particular size, cleansing it, and the disgust it produces in the mind of a delicate woman. He seems to prefer suspensory bandages, astringent injections into the vagina, and absolute, continued rest in the horizontal position, with the pelvis elevated. He has found, as a substitute for the pessary, sponge of a cylindrical form, about four inches in length, to act very well. This is saturated in a strong decoction of red-oak bark and placed in the vagina by means of the speculum. This acts as a pessary in a measure, and does not press on any particular point of the vagina, and is an excellent means of applying a local astringent. It should be removed daily and cleansed.

His treatment for all malpositions of the womb is the use of tonics, rest, astringent injections and a proper suspensory bandage. The latter may be made of calico or muslin, and should be of a triangular shape, two sides of the triangle being curved to fit the abdomen; to the angles, tapes are attached. He always suggests, when patients are walking about, that the hoop skirt should be supported by straps over the shoulders, so that the superincumbent mass of clothing may not drag around the waist.—(*Amer. Med. Times*, Dec. 22, 1860.)

VI.—*The Use of Pessaries.* By DR. P. STEWART, of Peekskill, New York.

After repeated trials of these instruments, Dr. Stewart has found so many inconveniences resulting from them, that he has abandoned their use and resorted to the direct application of astringents by the syringe or sponge, the horizontal position, riding in an easy carriage, tonics and the suspensory bandage. He uses the sponge not as a support, but to carry up the astringent and keep it in contact with the relaxed tissues. He regards the bandage as a *sine qua non.* It is made by fitting nicely over the pubes a pad of thin sole leather, from eight to ten inches long, and three or four wide; a soft pad is placed over the spine, and both are furnished with loops. Two strips of saddler's webbing pass round the hips through these loops, one above the other, and fastened in front; the lower one being a little the shortest, that the pressure may be exerted from below. Another strap of rolled cotton passes round the head of each thigh, and fastened to the other pad by a small ring and an elastic band. His success since the abandoning of pessaries has been decidedly marked.—(*Amer. Med. Times*, Jan. 12, 1861.)

VII.—*An Inquiry into the Correctness of the Doctrines of William Hunter in regard to Retroversion or Retroflexion of the Gravid Uterus.* By DR. W. TYLER SMITH, of London.

Dr. Smith's attention was especially directed to the subject by the case of a lady who suffered from complete retroversion in the unimpregnated state. She became pregnant, and went the full time. What was the condition of the uterus here after impregnation? To answer this he carefully watched the progress of gestation in a number of such cases, and was "convinced that the most common cause of retroversion of the gravid uterus is not to be found in the state of the pelvis or bladder, but in the occurrence of impregnation in the retroverted uterus and in the tendency of the organ thus impregnated to develop itself in this position." The os uteri approaches the pubis, and the fundus projects toward the hollow of the sacrum. At length the bladder and rectum are so pressed upon as to interfere with their functions. Owing to retention of the uterus within the pelvis, there is little or no increase in the size of the abdomen. Abortion frequently ensues from the mechanical irritation of the uterus.

The great design will be to prevent the full retroversion or strangulation of the uterus in the pelvis. As long as retroversion was supposed to occur suddenly and mysteriously, nothing could be done to avert it; but if it dates from the beginning of pregnancy, we may do much by position and attention to the bowels and bladder, and also when it becomes necessary, give prompt mechanical assistance by passing the hand into the vagina and carrying the fundus above the brim. We ought then to endeavor to prevent a return of the retroversion. The fœtus acts as an intra-uterine pessary, the organ is strengthened, and we have a better chance of curing the affection than under other circumstances. The abdominal bandage should not be too tight; the patient should lie on her side, inclining to the prone position, but avoiding recumbency. The bladder and rectum should be kept empty. She should remain in bed longer than usual, and on getting up, if any tendency to a return exists, an air pessary should be worn.

Dr. Oldham agreed perfectly in these views. Such cases were common in hospital practice. He did not like the use of the air pessary, as it might do harm, and in the greater number of cases mechanical attempts at replacement are unnecessary. When expedient to interfere, he gently opened the orifice of the vagina so as to fill the canal with air. The vagina thus became much distended, and gentle pressure with the finger upon the fundus sufficed to push the organ up into the normal position.

Dr. Barnes had one year ago published similar views. But was sure that the affection also occurs from accident, and suddenly takes place. He had tried Dr. Oldham's plan in two cases, but failed.

Dr. Waller took the same ground with Dr. Smith. His rule was to do nothing in the majority of cases, unless the rectum and bladder required attention. He had withdrawn thirteen pints of urine in one case which had been mistaken for dropsy, and the patient made a favorable recovery.

Dr. Priestley said there were other dangers in the early months, as abortion at the third or fourth, and these ought to be prevented. There is often no difficulty in replacing the uterus; but when the patient gets up it falls back again. —(*Brit. Med. Jour.*, Nov. 17, 1860.)

VIII.—*The Pathological Lesion of Phlegmasia Dolens.* By W. TILBURY FOX, M.D., of London.

This paper was an appendix to a former, and its object was to solve two main questions: 1. The essential condition or lesion of the limb in this affection. 2. The mode of production of this lesion.

In regard to the first, it was maintained that the presence of fibrinous serosity in, with more or less hypertrophy of, the fibro-cellular tissue, is the essential, the sufficient, pathological lesion; that the inflammation, the abscess, the sloughing, etc. are not peculiar or necessary parts of the affection, but common to many diseases, and the result of an eliminative act to rid the system of some *blood-poison;* that the latter may produce lymphatic and venous obstruction, and hence phlegmasia dolens; but it passes beyond this, giving rise to a distinct disease, such as abscess, pyæmia, etc.

Phlegmasia dolens in these cases is a local complication of the general disease, and the general symptoms are but parts of the phlegmasia. There are then two types of this disease:—

a. The complicated, in which an eliminative process (inflammation, abscess, etc.) takes place, these being the answer acts of the tissue to the blood state; the epidemic form, in which an effect is produced by a virus, superadded to what occurs in *b.* The other class—the uncomplicated—where the blood state does not require any eliminative actions to be performed on the part of the tissues, but where simple obstruction exists, such as pressure by tumor, etc., and simple thrombus; this being the essential, simple, ample disease, all else being superadded and accidental.

It having been shown that venous obstructions produced œdema *only*, and this *plus* lymphatic obstruction, (phlegmasia dolens,) the second question as to the mode of production of the lesion in the limb might be stated thus: How can obliteration of the lymphatics produce the peculiar change of the limb in phlegmasia dolens? The lymphatics being obstructed, the three offices of removing waste, of absorption, and of formative power, could not come into play.

It was then argued at length that the amount of lymphatic distribution and fibro-cellular tissue are in direct ratio—that fibrin is the pabulum of the latter tissue—and that Virchow's views on this point clash with sound doctrine. Lymphatic obstruction being followed by the retention of fibrinous serosity in the cellular tissue, the inference allowed by the foregoing facts was, that *one* office of the lymphatics is to remove all superfluous material from the cellular tissue; to keep the balance of nutrition there correct; hypertrophy and retention of fibrin in the cellular tissue ensuing upon lymphatic obstruction: and this explanation is confirmed by the behavior of the lymphatics in cases of cancerous ulceration, etc. (When a blood-poison is present, *special tissue actions*—as abscess and the like—are superadded.) It was attempted to be shown that absorption by the lymphatics from ulcerated surfaces might give rise to thrombus at the entrance of the thoracic duct into the junction of the jugular and subclavian veins, and thus account for phlegmasia dolens occurring in the upper extremity in cases of disease of other parts of the body, *e.g.* cancer uteri.—(*Brit. Med. Jour.*, Oct. 20, 1860.)

IX.—*Rare Termination of a Fibrous Tumor of the Uterus.* By Dr. Lumpe.

The patient, aged thirty-one, in 1848 had two miscarriages, after which she was subject to a profuse menorrhagia, and shortly perceived a tumor, accompanied with pains in the lower part of the abdomen. She became much emaciated, and in 1856 consulted Dr. Lumpe, and by the use of iron and quinia was much improved. In 1859 the hemorrhage was renewed, and at this time the tumor was about the size of an adult head, movable, situated near the fundus uteri, with little sensibility, no fluctuation, and of a uniform consistence. Œdema of the left leg now occurred, and, suddenly, jet-like discharges of a sero-purulent and fetid fluid took place, and which contained organic detritus. These continued for four months. The œdema then had almost disappeared, and spontaneously a diuresis and an abundant diarrhœa set in. A few weeks later, however, a general anasarca invaded the whole body, which, with extreme anæmia, anorexia, nausea, and sleeplessness, persisted two months. She then began to improve, the fetid discharges diminished, and by the end of another month the menstruation had become normal. During all this time the tumor was gradually diminishing in volume. A short time prior to the return of the menstruation, she had commenced to pass with the vaginal evacuations *calculous concretions* of various sizes, analogous to those sometimes found in the placenta. After the reappearance of the menses, these concretions still appeared in great numbers. She now rapidly improved, and by June, 1860, the body of the uterus, superadded to the tumor, was but little larger than the first.—(*Zeitschrift der Gesellschaft der Aerzte zu Wien*, No. 29, 1860; *Gaz. Hebdom.*, Nov. 1860.)

X.—*Contribution to the History of Abortions and Uterine Polypi.* By PROF. ROKITANSKY, of Vienna.

In making an autopsy of a young female, M. Rokitansky discovered in the uterus an ovule with extremely curious peculiarities. The cavity of the uterus was not notably dilated; the mucous membrane was swollen. The neck, on the contrary, was distended and of a globular form; its volume was almost double that of the body; it contained a rounded sac, reddish blue, fluctuating, and measuring two inches in diameter. This was suspended by a pedicle implanted on the anterior wall of the uterus, a little above the internal orifice. This pedicle was composed of hypertrophied mucous membrane. The uterine caducous coat had ruptured around the pedicle and formed at its junction with the ovule a species of ring. The ovule was composed of the normal elements. It was covered by the decidua reflexa, which presented inferiorly a circumscribed mortification extending equally into the whole thickness of the chorion. This was thin at its inferior part, but quite thick near the pedicle; it was ecchymosed throughout. The internal face was covered with a delicate amnion, which inclosed in its cavity an embryo an inch in length. The external surface of the ovule was surrounded by a very thin albuminous layer; it had not any connection with the internal face of the uterine neck, from which it was separated by clots of blood and a bloody liquid. The mucous membrane of the neck was much congested, reddish blue, rough, and covered with a whitish, thickened epithelium. The vagina contained also clots and a bloody liquid.

M. Rokitansky made a similar observation in another case, only the embryo had disappeared. He interprets these facts in this way:—

The egg has naturally contracted its adhesions to the mucous membrane which has furnished the normal covering. Then it has been displaced, and has descended into the cavity of the neck, where it has been developed. The displacement has been accompanied with considerable hypertrophy of mucous membrane of the wall where the ovule was grafted, and thus the pedicle was formed.

It is scarcely possible to determine truly the causes which have produced the displacement. It is most probable that it has been induced by uterine contractions, shortly after the affixing of the ovule; the pedicle then was the result of the sudden drawing upon the membrane. The subsequent development in the neck was a true secondary cervical pregnancy, producing a mechanical dilatation of the part.

The displacement was the commencement of an abortion, which would go on gradually, finally ending in hemorrhage.

It also shows by the mortification, that the fœtal envelopes may be perforated and the embryo expelled, while its appendages remain either wholly or partially *in situ*. Then the clots upon such an interrupted pregnancy may finish by forming what is called a fibrous polypus. According to Kiwisch, they are accompanied by profuse metrorrhagia and intense uterine pains for a variable time. He considers this explanation of the formation of such polypi as admissible.—(*Zeitschrift der Gesellschaft der Aerzte zu Wien*, No. 33, 1860; *Gaz. Hebdom.*)

XI.—*Intra-Uterine Small-pox.* By DR. ALEXANDER R. SIMPSON, of Edinburgh.

Mrs. McL., aged twenty-three, pregnant seven months, was attacked with small-pox, February seventh, in the discrete form, which ran its course as usual, and by the eighteenth day she was able to go out. Up to this time the fœtal movements were active, but on the twenty-sixth they became feebler and less frequent. By March seventh they had entirely ceased. The preceding day, when walking, she suddenly felt a weight or falling in the womb. On the twenty-second she was delivered of a dead fœtus, presenting evidences of having suffered with variola. The attack seems to have been mild, and the death to have occurred from fibrous degeneration of the placenta. The case, however, is very interesting, as showing exactly the date of the onset of the disease in the fœtus. The mother suffered, and after her recovery the fœtus was attacked.

Ibid. By DR. BRUCE, of Edinburgh.

This instance, as was the case with the other, was brought to the attention of the Edinburgh Obstetrical Society.

Mrs. G. passed favorably through a modified attack of small-pox. She was considerably advanced in pregnancy, having quickened some time previously. About two weeks after, the fœtal heart could not be heard. From this circumstance, and her sense of weight in the lower part of the abdomen, etc., it was concluded that the fœtus was dead, and premature labor was anticipated. About one month later she was delivered of a fœtus of six months, which had evidently been dead for some time. On examination of the body, marks of small-pox were found in various places. It would appear that its death occurred at the time when the mother was convalescing from the disease.

In the debate which ensued, other cases of intra-uterine disease were mentioned, together with instances where, though the mother had suffered severely, no traces of the disease could be found upon the child.—(*Edinburgh Medical Journal*, November, 1860.)

PHYSIOLOGY.

BY S. WEIR MITCHELL, M.D.,

LECTURER ON PHYSIOLOGY IN THE PHILA. MED. ASSOCIATION.

I.—*Zoospermes of the Frog; concerning their Vitality and the Transplantation of the Testicles of One Animal to Another.* Memoir which received a prize from the Academy at Brussels. By DR. PAOLO MANTEGAZZA.

Conclusions from the first part of the experiments upon the zoospermes of the frog:—

1. The zoospermes of the frog will live in any temperature from 13·75 degrees minus up to 43·75 degrees plus, (Centigrade.)

2. They will survive four consecutive freezings and thawings. They die after the fourth freezing only, after a long struggle with the cold.

3. They live for some time in a liquid sufficiently putrid for the development of infusoriæ.

4. They outlive the frog to which they belong a period varying from twelve hours to seven and a half days.

5. They live in a barometric vacuum.

6. They live excellently in the blood, in the mucus of the mouth, and in the urine of the frog

7. They subsist in human sperm, and in the water which frogs frequent.

8. They are killed by the gastric juice of the frog, phosphorated oil, alcohol, tincture of *coca*, acetic and sulphuric acids, by a solution of the ferrocyanate of potassium, and by chloroform.

9. Zoospermes live longer when left in the body than when the testicles are removed, the surrounding conditions of temperature and humidity being equal.

10. The individual constitution of the frog exercises a greater influence on the vitality of the zoosperme than the kind of death to which the frog is submitted.

For example: two frogs, equally robust, of the same age, killed at the same time by the destruction of the medulla spinalis, furnished zoospermes; those from one lived eighty-three hours and fifteen minutes; those from the other possessed more vitality, for they lived ninety-four hours and fifty-six minutes.

Three frogs, killed by submersion, presented these very different results as to the vitality of zoospermes:—

1	zoospermes	lived	172	hours.
2	"	"	157	"
3	"	"	135	"

There is observed a still greater difference in the frogs which die spontaneously, for in these, upon autopsy, the zoospermes will almost always be found living.

Submersion in water which kills the healthy frog in nineteen hours, aids the vitality of the zoospermes, and those thus submerged resist death longer than others.

From all these observations we can form an idea of the tenacity of vitality in these histological elements. They resist the temperature of Senegal, and may be frozen and thawed four times in succession, without dying; up to a certain point they resist putrefaction, and have no need of atmospheric air for the maintenance of life.

The organs which constitute the microcosm of an animal mechanism are not merely portions closely connected by anatomical and physiological relations to the individual to which they belong, but they have also, by their structure and the purpose to which they are destined, an individuality which gives them a kind of automatic life. If the many facts already acquired by the conquest of science have not proved the physiological fact, it would be demonstrated with perfect clearness by the brilliant experiments of M. Ollier, upon the transplantation of periosteum. Still further, the experiments I am about to relate prove that an organ, very complex in its anatomical structure, and of great importance, in consequence of the function it fulfills in the organism, may be transplanted from one animal to another, and may continue to live in the new soil by its own peculiar life, for an indeterminate period.

Mantegazza now proceeds to give the details of fifty-seven experiments, in each of which he transplants a testicle of a frog to the body of another frog, male or female, either under the skin of the abdomen or thigh, and in almost all of them the transplantation was successful; that is, the testicle adhered to the tissues into which it was engrafted, and its zoospermes were found living at the expiration of various periods, the longest of which was 1650 hours, or more than two months and a quarter. The testicle, in many of these cases, became very vascular in its new location, and surrounded with a vascular envelope, through the medium of which it partook of the circulation of the blood of the animal into which it had been engrafted.

Signior Mantegazza says, in conclusion of this second part of his researches: These experiments prove that an organ as complex as the testicle may be transplanted from one individual to another, and live in the new organism for the space of seventy days. If it were possible to protract the life of frogs thus prepared still longer, by keeping them in ample and congenial reservoirs, we should doubtless observe phenomena still more important; because a gland would necessarily form for itself an excretory canal, and perhaps this gland, thus perfectly engrafted, might modify to a certain point the instincts of the animal into which it had been transplanted.

In the fourteenth and fifty-seventh experiments, it will be seen there was formed in each a true permeable tube or duct in the vicinity of the testicle; but, not having had the good fortune to see zoospermes issue from these ducts, I must, for the present, be contented to merely note the fact, leaving to future researches the choice of perfecting the observation.

Notwithstanding the close attention bestowed, I was not able to catch the instant in which the small tumor, which precedes the opening of the duct upon the surface of the skin, ruptured, in consequence of which I must, for the present, remain in doubt whether there was not an issue of true sperm at that moment, and whether the excretion was not arrested in consequence of the very bad conditions, as to nutrition, in which the frogs were placed.

To throw some light on this most obscure point, says Mantegazza, I will borrow, from Dr. Udikem, the fact observed by Wagner, who extirpated the testicle of a cock while it was yet a chicken, and re-engrafted it into the same bird, but in another part of the body, and found that when the cock became grown it had the crest and crow like other full-grown roosters. But Schwann, repeating the same experiment, found, on the other hand, that the transplanted testicle was by degrees absorbed, and the cock operated upon became a capon.

The transplanted testicle lives several days in the new organism, without attaching itself to any point, and I have often moved the testicle about under the skin for a period of two weeks, to break up its adhesions and prevent their formation, and thus preserve the testicle isolated under the teguments. In these cases, the organ lived by endosmosis. Somewhat later, the testicle flattened into a gelatinous stratum, which constitutes a sort of membraneous skin, and becomes fixed at some point of the new organism, getting into communication, by new blood-vessels, with the nutrient circulation of the frog. By its continued presence it may form a small excavation in the muscles under which it has been placed. When we have found the testicle adherent, we have not considered it necessary to resort to injection or to a fine dissection, to become convinced that the testicle had become a part of the new body, for the naked eye, or, at most, the eye aided by a loop, clearly perceived many blood-vessels surrounding the testicle and communicating with the organism.

The testicle lives in the female organism as well as the male, in the cavity of the belly as well as under the skin of the abdomen, or thigh, or back. (For the complete original essay, of which this is a mere abstract, see *Gaz. Med. Lomb.*, No. 26 et seq., July, 1860, translated in the *Pacific Med. and Surg. Journal*, No. 36, 1860.)

II.—*On the Excretion of Creatine and Creatinine in Health and Disease.*

Dr. Edward Schottin, of Dresden, has undertaken the laborious task of investigating the "Excretion of Creatine and Creatinine by the Urine and Effusions in the Healthy and Diseased Conditions of the Organism." Dr. Schottin has made use of his own urine, in order to determine the normal amount of creatine excreted. Under the use of a mixed diet, the quantity excreted could be seen only with the aid of the microscope: after strictly confining himself to vegetable food for thirty hours, no trace of creatinine was perceptible; while, after an almost exclusive use of animal food, he detected its presence to the amount of 0·086 of a milligramme. On taking half a milligramme of creatine, together with vegetable diet, no creatinine was observed.

The following cases of disease were investigated, with negative results:—

1. Tuberculosis of the lungs; the patient was much reduced in strength; there was high fever in the evening.
2. Tuberculosis of the lungs, with the formation of cavities; no fever.
3. Tuberculosis of the lungs and intestines; pleuritic exudation nine days before death. In the pleuritic and peritoneal exudations there was no creatine.
4. Granulated liver, with ascites and œdema of the feet.
5. Pneumonia, fourth day of the disease.
6. Bright's degeneration of the kidneys; general dropsy, without uræmic symptoms.
7. Progressive ataxy of the locomotive functions.
8. Paralysis of the arms, and weakness of the lower extremities, in consequence of chronic lead poisoning.
9. Chlorosis.
10. Spinal paralysis.

The cases in which creatine and creatinine appear as pathological secretions, Schottin then divides into two classes.

The first comprises those pathological changes in consequence of which the conversion of creatine and creatinine into bodies of a higher degree of oxydation is prevented; (as Bright's disease, with symptoms of uræmia.) The second class comprises, on the other hand, those cases in consequence of which the creatine is primarily increased by the degeneration of the striated muscles, (as typhus.)

As belonging to the first class, twenty-three cases of uræmia were investigated; in all of them a considerable increase of creatinine was observed. There were eleven cases of Bright's disease, with general dropsy; and at the various times at which they were examined, no increase of creatinine was found, and in most cases not a trace was observed.

The first series of cases furnished the following general results:—

1. The greater the disturbance of the secretion of the kidneys, the greater was the accumulation of creatine in the body.

2. The more urgent the symptoms of uræmia, the greater was the accumulation of creatine (creatinine?) in the blood.

3. The greater the secretion of the serous membranes, and the greater the œdema, the smaller was the accumulation of creatine (creatinine?) in the blood, and its elimination as creatinine in the urine.

Schottin remarks, further: "I have in these pages already repeatedly opposed the hypothesis of the conversion of urea in the blood into carbonate of ammonia, and of the consequent origin of uræmic symptoms. I am persuaded that the true reason of the occurrence of those symptoms is to be sought in this fact, viz., that by the obstructed secretion of urine in the kidneys, the general change of tissue is arrested in the brain and other parts of the body; and I have advanced the hypothesis that a lower grade of oxydation, thus determined, gives rise to the uræmic symptoms. I must still maintain my supposition, and I think I shall be able to offer satisfactory proof of it by means of the foregoing results. . . . . . A substance like creatinine, which has such an unusually strong alkaline reaction, and decomposes even the salts of ammonia, can act only as a poison upon the organism.

"Perhaps, too, the different observations upon the secretion of ammonia in uræmia and typhus have resulted only from the large amount of creatinine contained in the blood, in consequence of which ammonia was set free from its combinations; a view that is the more probable when we discover, further, how great an increase of creatinine takes place in the muscles and urine in typhus, with or without a disturbance in the secretion of the kidneys."

As belonging to the second class of the above-named diseases, Schottin examined twenty-two cases of abdominal typhus. The increase in the secretion of creatinine, which constantly takes place in these cases, begins generally in the middle of the second week of the disease. The quantity of creatinine in the urine rises to 0·2–0·3–0·6 of a milligramme.

The increase of the creatine contained in the muscles was also shown by Schottin. In the substance of the brain no such increase was found.

The author then notices a comprehensive pathological, anatomical, and histological investigation conducted by Professor Lenker, which has led to the result that in abdominal typhus a very extensive degeneration of the striated muscles is found, and this causes a partial destruction of the muscular fibres. "It seems" (page 437) "that the peculiar mode of the destruction of the muscle fibres determines the increase of creatine and creatinine."

With reference to the therapeutics, Schottin then shows that every increased formation of creatinine, especially when complicated with disturbance in the secretion of the kidneys, or produced by this disturbance, must occasion an abnormal alkalinity in the blood, and a formation of free ammonia, as far as possible. The chief indication, then, he thinks, is to oppose this alkaline condition, and he considers the use of those acids as especially called for which enter the blood as such, as the tannic and phosphoric acids.—(*Correspondenz Blatt des Verein für Gemeinschafteiche Arbeiten*, from the *Maryland and Virginia Medical Journal*, January, 1861.)

III.—*On Pulmonary Osmose; or Researches on Absorption and Exhalation by the Respiratory Organs.* By DR. LOUIS MANDL.

Mandl's extensive original essay being completed, we present our readers with a resumé of his experiments.

(*a*) Animals breathing in water cannot live when a more or less quantity of saccharine matter is dissolved therein. The substances experimented with include the true sugars, as cane sugar, beet sugar, glucose, sugar of milk, and the non-fermentable sweet principles, as glycerin, mannite. The rapidity with which these solutions act depends on the relative quantity of the sugar in solution, the quality of the sugar, and the species and condition of the animal.

(*b*) Experiments were made with a great number of different species of aquatic animals. They all lived much longer in solutions of cane sugar than in those of glycerin of the same strength. Thus, fishes, of the size of twelve to fifteen centimetres, (from five to six inches long,) perished in a solution with the tenth part of glycerin at the end of forty minutes, and in a solution of sugar only, at the end of four to five hours, all other circumstances being equal.

(*c*) Very numerous experiments have demonstrated that death can be attributed neither to poisoning, nor to chemical action on the blood, nor to fermentation, nor to the absence of air, nor to the viscosity, but that it is solely and entirely due to osmose (endosmose and exosmose) exercised by the saccharine solutions.

(*d*) This action goes on through all permeable membranes, and especially through those of the organs of respiration. The non-fermentable saccharine principles possess an osmotic power greater than that of the true sugars; and this explains the greater rapidity of their action. In infusoria this action goes on as in a bladder; osmose at once acts through the whole extent of their very thin integument and body; they are observed first to diminish, (exosmose,) then to swell up, (endosmose,) until they sometimes even burst; but the osmotic action going on over this whole extent is in all cases the cause of their rapid death. In animals of higher development, where the thickness of the teguments limits osmose principally to the gills, the blood is seen to thicken in the gills, and circulation to be arrested by exosmose of the liquid parts. The circulation in the lung of a frog can also be arrested over a limited space instantly with a drop of glycerin, and in a few minutes with simple syrup.

(*e*) Endosmometric experiments were made with animal membranes, (pericardium,) vegetable, (collodion,) and mineral, (unglazed porcelain,) to determine the solid constituents of the blood that pass into the saccharine liquid. It has been proven that the salts of the serum pass first, then albumen, then coloring matter.

(*f*) Development is equally arrested by saccharine solutions, as was proved by the experiments made with muscular tissue macerated in saccharine solutions, and those on fecundated eggs of fishes.

(*g*) Many physiological and pathological phenomena (to which we in this *summary* can, however, but cursorily refer) are referable to osmose exercised by saccharine solutions. Thus, the thirst excited by ingestion of sugar, which absorbs the water of the tissues with which it comes in contact; the antiseptic and preserving virtues of sugar, by the arrest of development of organisms; the digestive power of small quantities of sugar, which provoke the exosmose of the gastric juice; while large quantities introduced into the blood increase its osmotic power, which explains the use of sugar in the treatment of dropsies. The abundance of glucose in all the tissues of diabetic patients explains the constant thirst, the impossibility of any serious accumulation, and perhaps, also, by arrest of circulation, the gangrene sometimes observed in such patients. The use of glycerin as a local application is also founded on its great osmotic power. Accidental local tuberculosis, the diagnosis and treatment of which differ essentially from that of "diathesical" tuberculosis, is perhaps the result of sugar being carried into the lung; (but to this subject we will devote a new paragraph, and literally translate the author's language.)

(*h*) My studies on the etiology of tubercles (Mandl having previously demonstrated the fact that tubercle is not a specific product, but is produced from coagulation of secerned liquid substances of the blood) have long led me to think that, as to their origin, there are two distinct kinds of tubercles: the one depending on accident, the other on diathesis; the former only constitutes a local affection, the other, the symptoms of a constitutional disease. Experiments actually undertaken tended to produce local accidental tubercles, by the injection into the vesicles of the lung of osmogenetic substances, and particularly of saccharine matter.

While the limited number of my experiments imposes upon me great reserve, as yet, the results obtained give me hope of being able to prove, thus experimentally, the production of tubercles only localized in the lung, by accidental exudation (exosmose) of plastic matters, independent of all diathesis. These experiments will be published in due time. I will here only add, that they have led me back to the point of departure of the researches on osmose, and to the accidental production of tubercles in diabetes, where all the tissues are impregnated with glucose. These labors open a new field to therapeutics. They explain the cure, spontaneous or by art, frequently occurring in tuberculous affections of the lungs, not depending on diathesis, but purely local.—(*Arch. Gén. de Méd.*, July and August, 1860, from *Amer. Med. Monthly and N. Y. Review*, November, 1860.)

MATERIA MEDICA AND THERAPEUTICS; MEDICAL CHEMISTRY; TOXICOLOGY AND LEGAL MEDICNE.

BY EMIL FISCHER, M.D.

MATERIA MEDICA AND THERAPEUTICS.

I.—*On the Use of the Leaves of Globularia Alypum as a Purgative.* By ARTHUR LEARED, M.R.I.A., etc. etc.

An attempt has been lately made in France to revive the use of the leaves of Globularia Alypum as a purgative. Dr. Planchon, of Montpellier, tells us in his essay (*vide* abstract in this journal, May, 1860, p. 534,) that the qualities which recommend them are, that they neither induce nausea, vomiting or griping, that they purge without irritation, while their bitter properties give them a tonic action. Above all, that the action of the medicine is unattended by subsequent constipation; and in twenty-two detailed cases in which the drug was administered, this appears fully borne out. It was this important circumstance which induced the author tc experiment with the medicine as one likely to enrich our materia medica. He prescribed the medicine for twenty out-patients at the Royal Infirmary for Diseases of the Chest, and noted the results in tabular form. A decoction of one ounce (thirty grammes, Dr. Planchon) of the leaves boiled for ten minutes in about a quarter of a pint of water, was given for a dose. Subsequently half this dose was employed, and lastly a concentrated infusion, of which half an ounce in a diluted form was the dose. With one or two exceptions, the draught was always taken before breakfast. From the table the author makes the following deductions: The intervals between taking the dose and the first evacuation, as well as the duration of action, were, as might be expected, proportionate to the amount of the dose. Thus, excluding the cases in which the periods were not noted, when one ounce of the leaves was employed, the average interval was two hours and thirty-six minutes; when half an ounce, six hours and six minutes; and when half an ounce of the infusion was used, nine hours and four minutes; and the average duration of action was respectively twenty-five hours and twenty minutes, nine hours and thirteen minutes, and five hours and five minutes. The same relation may be observed as to the number of stools, but other effects do not appear to have so completely coincided. In one case only the bowels were said to have been regulated. Constipation, varying from one to several days, occurred in thirteen cases, while the motions were more or less relaxed for one or more days in four; not mentioned in two. No griping occurred in five cases; slight griping in seven, while pain was more decided in the same number; not mentioned in one. Several of the patients were questioned as to diuretic and other effects, but nothing was elicited.

"It is plain," says Dr. Leared, "that in those cases in which the bowels were relaxed, on one or more days after the day of taking the medicine, the effect was due to a continuance of its purgative action. This happened especially after large doses as employed by Dr. Planchon, and I can only attribute the great apparent discrepancy in our results to a different interpretation of the same cause. Like other purgatives of its class, Globularia Alypum has a decidedly constipating tendency. It possesses, however, no virulent properties, but appears a safe and efficient purgative, remarkable perhaps for the duration of its action. In its griping tendencies and the nature of the stools, it is allied to senna, but from its tonic properties I assign it a position intermediate between senna and rhubarb."—(*The London Medical Review*, December, 1860.)

II.—*Means of Removing the Taste and Smell of Cod-liver Oil.* By DR. JEANNEL.

Those who have had recourse to this medicine are well acquainted with its peculiar fishy taste and smell, which to many patients are extremely disgusting. This circumstance has induced Dr. Jeannel, of Bordeaux, to make some experiments with a view to remove this inconvenience. Being aware that bitter almonds, introduced into a portion containing musk, destroy its smell immediately, and that chemists generally get rid of any smell their mortars may have contracted by rubbing them with the moist paste which remains after having prepared an emulsion of bitter almonds, it struck him that any substance containing prussic acid, like bitter almonds, might be serviceable in ridding cod-liver oil of its savor. He therefore tried the essence of bitter almonds, laurel-water, and even pure prussic acid, all with equal success. Five decigrammes of the essence will disinfect one hundred grammes of oil; in other words, it must be used in the proportion of one to two hundred. If pure prussic acid be used, the proportion is six of acid to ten thousand of oil. Laurel-water of middling strength appears to be the most convenient; the oil is shaken with once or twice its volume of laurel-water, according to the degree of infection to be removed, and the mixture then allowed to stand for forty-eight hours. When the oil is settled the laurel-water is poured off, and the oil filtered, if necessary. By this process the oil becomes quite sweet, with an agreeable taste of almonds. The oil thus prepared may be taken without any danger, even at the rate of one hundred grammes a day, and is quite as efficacious as in its natural state. Rancidity, however, cannot be got rid of in this way. Castor oil may be sweetened by a similar process; three drops of essence of bitter almonds will communicate an agreeable taste and smell to one hundred grammes of oil.—(*Chemist and Druggist*, December, 1860.)

III.—*Kousso in Tape-worm.* By M. BOUCHARDAT.

Kousso is, up to the present time, the most efficient remedy known for tænia. M. Bouchardat asserts that he has never found it fail, when properly exhibited, and he conveys to practitioners the following suggestions on the subject in the *Répertoire de Pharmacie:* An important condition for the administration of kousso, says the professor, is that, one or two days before taking the remedy, joints of tænia should have been passed. Panada is the only food allowable on the day which precedes the exhibition of the drug; half an ounce of kousso, infused in eight ounces of boiling water, is the usual dose, and should be taken cold. This draught, however, does not agree with all stomachs, and M. Bouchardat has caused M. Mentel, a dispensing chemist in Paris, to prepare, with one part of kousso and two of sugar, an ounce and a half of granules, which the patient can take fasting in five or six doses, in the space of half an hour, with a cold infusion of lime-flowers. Should thirst supervene, the patient may be allowed to drink sparingly of water. In one or two hours the bowels begin to act, and the tænia is generally passed entire, after two or three motions. Should any delay occur in the expulsion of the parasite, two ounces of castor oil in broth will secure the desired result. The tænia should be received in water at 86° Fahr.; the water is gently drained off, and, with a strong magnifier, the filiform portion of the worm should be closely inspected for the discovery of the *scolex* and hooklets.—(*Journal of Practical Medicine and Surgery*, November, 1860.)

IV.—*Onion-juice in Ovarian Dropsy.* By M. VÉNOT.

The *Journal de Médecine* of Bordeaux contains a new case of dropsy cured by the use of onion-juice. The patient was a woman, fifty years of age, in whom three distinguished physicians of Bordeaux, MM. Vénot, Sen., Cazenave, and de Ciébra, had diagnosticated, on the 28th of January, 1860, an encysted dropsy of the right ovary of two years' duration. The consulting physicians prescribed the following remedies: Iodide of potassium in aqueous solution; baths and half-baths, with bicarbonate of soda; potions containing the same salt; mercurial frictions *larga manu;* drastics (gamboge, jalap;) then cauterization of the abdominal walls; and lastly, methodic puncturing. This rational method of treatment, which was continued for fifteen days in its medical part, was not followed by any result, and as the patient was afraid of cauteries and punctures, M. Vénot had recourse to onion-juice, as recommended by M. Serre (d'Alais) and MM. Coster and Sarraméa. The use of this strange specific was regulated as follows:—

1. Discontinuance of the medicines previously taken.
2. Abstinence from all food, and especially from ordinary drinks.
3. Half a glass of the juice of white onions, (*allium cepa vulgaris alba,*) to be taken in a cup of milk sweetened with sugar, every morning and evening.
4. During the day, two more cups of pure milk.

This treatment was stoically followed out, and soon gave encouragement of success. Toward the thirtieth day, the urine was regularly voided in great abundance, the abdomen became smaller, and after continuing the treatment for one month and a half, the patient was rid of her dropsy, and prepared herself to go to Biarritz.—(*Journal de Pharmacie et de Chimie*, December, 1860.)

V.—*Treatment of Phthisis by Chlorate of Potassa.* By DR. E. J. FOUNTAIN.

Dr. E. J. Fountain, in the *American Medical Monthly*, communicates a paper, read by himself at the late meeting of the American Medical Association. Dr. Fountain contends that oxygen is needed in cases of phthisis, to counteract the influences resulting from imperfect aeration of the blood. He reports several cases in which the patients improved under the influence of the chlorate of potassa, of which at least half an ounce was daily administered. Dr. Fountain concludes that:—

1. The chlorate of potassa can be exhibited in large doses every day, for a long period, without injury.

2. It assists the respiratory functions by supplying the blood with oxygen.

3. It acts as a natural tonic, alterative, and depurant, by increasing the supply of that element which is the chief agent in the chemical processes in the human system.—(*New Orleans Medical News and Hospital Gazette*, December, 1860.)

VI.—*Woorara in Epilepsy.* By M. THIERCELIN.

M. Thiercelin, struck by the counteraction of artificially-produced convulsions by woorara, has been led to administer the drug in the treatment of several convulsive diseases, more especially epilepsy, and with most marked effect. Particulars of two cases of epilepsy, which had resisted a variety of previous treatment, were laid before the members of the Academy of Sciences at their last sitting. One of the subjects treated by woorara was a young man, aged twenty-three. In him the disease was hereditary and congenital. The patient had passed four years at Charenton, and was accounted incurable. The number of attacks during the month amounted to twenty, whereof the greater part was most severe. The second case was that of a girl of seventeen, a sufferer from epilepsy for eight years past, and during the last twelve months subject to daily fits. Under the influence of the woorara treatment, (the drug being applied daily in doses varying from half a grain to a grain to the suppurating surface of a blister,) the attacks diminished in frequency so considerably that in the first case they fell in number from twenty to five per month, and in the second, from twenty-nine or thirty to eight. Not only did the frequency of the fits decrease, but a striking general improvement occurred in the health of both patients, and a marked diminution of the nervous irritability always accompanying epilepsy was also noticed. Unfortunately, the treatment could only be persisted in for eight weeks, as the stock of woorara ran short; nevertheless, the results obtained were decidedly of a nature to encourage other practitioners in following in the footsteps of M. Thiercelin.—(*Lancet*, December 1, 1860.)

VII.—*Arsenic in Indigestion.* By M. GERMAIN.

In a paper recently read before the Academy of Medicine, by M. Germain, the author stated that remarkable success had attended his administering arsenious acid in chronic dyspepsia, and in some affections conjoined to or dependent on dyspepsia. He gives only a milligramme (one-seventieth of a grain) per diem, in the form of a pill, taken just before a meal.—(*Gaz. Hebdom.*, and *Chemist and Druggist*, December, 1860.)

VIII.—*The Use of Ergot of Rye in Blenorrhagia, etc.* By M. LEBEL.

In a memoir upon this subject, M. Lebel states that, after a due consideration of the phenomena of contractility, which are produced by the ingestion of the ergot of rye, either medicinally or when contained in the food, he determined to avail himself of its astringent effects in affections of the canal of the urethra, of the prostate gland, and of the vagina, and that he has been very successful in curing numerous cases of mucous discharges by the administration of this drug.

Dr. Desruelles, one of the professors at Val-de-Grâce, has also for many years made use of this therapeutic agent with considerable benefit in cases of urethral discharges.—(*London Medical Review*, December, 1860.)

IX.—*Thermo-Therapeia, or the Heat Cure.* By MR. ERASMUS WILSON.

For a knowledge of thermo-therapeia, medical science is indebted to Mr. Urquhart. Thermo-therapeia is the application of atmospheric air at a high temperature to the surface of the body for the relief of pain and disease. The poets used the expression "bathed in light;" if we adopt the same language in reference to air, we may style the process a bathing in hot air, or a hot air bath; but in no other sense does the term "bath" apply to its use. I will endeavor to trace my own experience on my first introduction to the thermæ, now some time back. It was the winter time, the season bitterly cold, my inception as a "companion of the bath" took place in the private thermæ of my esteemed friend Mr. George Witt, of Prince's Terrace, Hyde Park. As an example of simplicity of construction, Mr. Witt's thermæ may be usefully taken as an illustration. He had at the back of his house a room, twenty feet long, by ten feet in breadth, and twelve feet high, with a window looking out upon a lead-flat, such as is common in London houses. To convert this room into a thermæ, he divided it into two compartments by means of a wall which crossed it about one-third from its further end. He had thus two apartments, an outer one, the cooling room or *frigidarium* of the Roman thermæ; and an inner one entered by two small doors (inner and outer) in the partition wall, the *caldarium, calidarium,* or *sudatorium.* Having left my garments in a portion of the outer apartment which served as a *vestiarium,* and girt about the loins with a *cummerbund,* the kilt of oriental nations, I entered the calidarium; the temperature was delicious, such a contrast with the exterior world! The wind and snow were raging without, while here was a paradise of 135 degrees of Fahrenheit. Within this hallowed nook anxiety and care and fatigue, like the burden of Bunyan's Christian, seemed to fall from my shoulders; I stretched forth my limbs in peace and enjoyment; the brain seemed to think more lightly and pleasantly, and my ideas flowed brightly and calmly.

My friend, Mr. Witt, in the course of a few minutes, was streaming with perspiration, which ran down his face in rills and dripped from his elbows and finger ends in continuous drops, while my skin was as yet dry. I was struck also with the rich and healthy complexion of his skin; it took its hues from the free circulation of the pure arterial stream through the capillary plexus of the derma; as he drew his fingers forcibly across his chest, the white traces left by their pressure were instantly replaced by the glowing vermilion of the arterial blood. There were no gorged capillaries in that skin; no venous transformation in that cutaneous plexus; no deposits of unhealthy coloring matter either in the cuticle or in the tissues beneath; no pallor, no excess and no deficiency of fat; no choked pores; no wrinkles from loss of elasticity and contractility of the fibrous and muscular structures of the corium; no abnormal or deficient sensibility of the nerves,—all was, as nature made it, perfect and beautiful. I looked for the first time in my life on a really healthy skin. How very curious and striking was the difference between my friend's skin and that of every one present; one gentleman, a finely built, handsome man, with a remarkably capacious chest, had too great a preponderance of adipose tissue, while the hue of the skin in an oblique light was a bright golden yellow. In another, the muddy tinge of the skin discovered the impure and muddy condition of the blood. The habitual use of the thermæ removes these discolorations, these indications of imperfect elimination by drainage through the perspiratory system, and while it gives beauty to the skin, bestows health on the entire economy. After a free perspiration of half an hour's duration, I was anointed with soap and had a rub down with a wisp of white fibre called *lyf*, the fibre of one of the palm trees commonly used in the East for the purpose to which it was now being applied. To the friction with soap succeeded a shower of warm water, then a douche of cold water, after which I was made to sit still for some minutes until the warmth of the skin was restored.

From the calidarium I passed therefore to the frigidarium, and on this occasion, midwinter and a piercingly cold, snowy day, truly deserving its name. I was then *cloaked* in a sheet taken from one of the pigeon holes of the *columbarium* standing in the corner of the room, my *cummerbund* was allowed to drop on the floor, and I was made to recline upon a cane couch immediately under the open window. How cool and pleasant were the puffs of wind that played over my face and limbs—how different their impression on my skin to what they had been an hour before! I needed not the assurance of my friend that there was no fear of catarrh or bronchitis; my own feelings told me that I could resist any amount of cold, and I was obliged to suppress a longing to walk out upon the leads with no other covering than my sheet into the midst of the sleet and wind; had the lead flat been a terrace or a lawn, I could not have resisted the temptation. After awhile I exchanged the horizontal position on the couch by the open window, to a sitting posture; the sheet was thrown off from my back and limbs; the moisture of the surface was dried up, no wiping excepting of the head and face was practiced or required; the skin felt smooth and warm, and I was permitted to dress, but with the injunction that I was to dress leisurely lest the perspiration which had ceased, should again be excited. It is worthy of notice that great attention is paid to the temperature of the skin during the curriculum of the thermæ; after the cold douche, we return to the calidarium to recover any waste of heat; and in the after cooling of the body in the frigidarium, the whole of the moisture must be dried off the skin, and perspiration must be wholly suppressed, as indicated by a peculiar smoothness and polish of the surface, before we are qualified to resume our dress. All clamminess of the skin must have ceased entirely before we resort again to our usual coverings.

Among my fellow subjects for the thermæ, I have seen numerous examples of relief from painful affections dependent on morbid composition of the blood. Several were cured of gout, of rheumatism, of neuralgia. A clergyman and doctor of divinity, who resorted to the thermæ to reduce redundancy of adipose accumulation, suffered habitually during the winter season from catarrh, bronchitis, and neuralgia, and was often laid up for weeks together with these affections. Since he has adopted the use of the thermæ, which he enjoys excessively, he has diminished in bulk, he has lost all proneness to catarrh and bronchitis, and no longer experiences the pangs of neuralgia. Recently I was much interested in seeing a case of eczema of the face treated throughout by the thermal process alone; the patient lived in the thermæ for several days, he used very high temperatures, and he succeeded completely in curing his disease. It was curious, he remarked, to observe the patches of eruption; they yielded no perspiration and looked like so many parched up islets in the midst of the surrounding copiously perspiring skin. At about the same time a medical friend consulted me for prurigo senilis. "You know Mr. Witt; go and ask him to admit you to his thermæ," was my counsel. The next time I paid a visit to my friend's thermæ, there was my elderly patient luxuriating in the fullness of enjoyment. That day he left his prurigo senilis behind him in the calidarium, and I believe has had no reminder of it since. He went back to his home on the coast, and now offers a seat in his own thermæ to his curious or suffering friends.

I have hinted at the curative effects of very high temperatures; and both Mr. Urquhart and Mr. Rolland have mentioned to me important results from this process. It occurred to Mr. Urquhart's mind that as fever heat was represented by 112°, he should be able, could he create a temperature higher than fever-heat, to supersede the stage of fever at once. Thus, taking the beginning of the cold stage, which nature seemed to struggle painfully to overcome, he was enabled by a high thermal temperature to cut it short at once and to pass over it and the hot stage to that which nature seemed desirous of reaching, namely, the sweating stage. He believes that at a certain temperature he can put a stop to the fermentative process of zymotic diseases; and at a higher temperature still, destroy animal poisons. He suggests, moreover, a curious and important inquiry, namely, the influence on the chemical composition of the blood circulating through the capillary plexuses of the skin, of hot air having a temperature of 160° of Fahrenheit. Not so much its influence on the healthy blood as on the blood of persons in a state of disease.

A member of Mr. Urquhart's family, a child, was accidentally burnt; the burn was distressingly painful; various applications had been made, without relief; the child was accustomed to the thermæ, and desired to go into it; it was carried into the thermal chamber, and the pain of the burn was immediately assuaged. Mr. Urquhart himself received a severe scald; he betook himself to the thermæ; there in a heated atmosphere he directed upon the injured part a blast of air hotter than the temperature of the apartment; the pain became lessened, the process of effusion, which results in the production of a blister, was arrested; to use a popular expression, "the heat had drawn out the heat."

Looking at the thermæ in a social and political point of view, we find that it is wonderfully adapted for the preservation in health of large bodies of men, combining in itself the respective advantages of air, exercise, and ablution. Adopted by our own army, there cannot be a doubt that it would very considerably reduce the rate of sickness and death, and add to the efficiency of the men. It is applicable, also, in all cases where numbers of persons are collected together, as in barracks, prisons, poor-houses, factories, and schools; in large business establishments, where a considerable number of young men or young women are assembled; or in places of temporary meeting, as the House of Commons and clubs. It must always be borne in mind that the thermæ not only offers advantages as respects physical health, but it also conduces to moral vigor. But the usefulness of the thermæ has even a wider sphere; the Londoner, or the inhabitant of a large city, would live as healthily immured within his city walls as the rustic amid the fields and meadows of the country. His thermæ would be to him in the place of a country house, of a horse; it would give him air, exercise, freshness, health, and life.

I might add very materially to the long list of conditions to which the thermæ might be applied with advantage, but I limit myself to a single one more; it is that of extensive works, employing a large number of men, either in operations in themselves unsalutary, or in unhealthy localities. The importance of preserving a body of working men in a state of health, and in the best condition for the performance of their duties, must strike every one, and is an object worthy a moderate sacrifice on the part of proprietors or owners. There are many localities in which miasmatic fevers abound, and constantly incapacitate the working force of large operative establishments. I believe that a few pounds expended in thermæ would correct this evil; would put the men into condition to resist the miasmatic force, and to eject the poisonous elements from the blood when they had already found admission into the organism.—(*Dublin Medical Press*, October 24, 1860; abridged from the *British Medical Journal.*)

TOXICOLOGY AND LEGAL MEDICINE.

I.—*Poisoning by Oxalic Acid.* By MR. IKIN.

"A private in the left wing of the Twelfth Lancers, (recently returned from India,) a fine-looking man, twenty-six years of age, of only three or four years' service, bilious temperament, and liable at times to fits of depression, traced to anxiety about his wife and two children, he having married without leave, or rather, as was afterward ascertained, he was married when he enlisted; consequently took a false oath. He joined the regiment in India, and had only just returned, after obtaining leave of absence, from visiting his wife in London, when he committed the rash act of swallowing poison. He had just returned from duty in the riding-school, at half-past eight A.M., and had fallen from his horse, but was not injured, when he was seen mixing something in a basin at the pump, the contents of which he swallowed, dashing the basin on the ground, and remarking to a comrade near that 'he had done the service a good turn, and had taken an ounce of poison.' On returning at once to his barrack-room, he commenced to vomit and purge. He was removed immediately to the hospital, close at hand, and I was sent for. The hospital sergeant, a very intelligent man, acting under the orders of the commanding officer, who happened to be on the spot, administered an emetic, warm water, etc. I reached the hospital in twenty-five minutes from the time of his taking the poison, but he had just ceased to breathe as I entered. I continued the use of every available means for some time, but without effect. A paper, marked 'poison,' was picked up under his barrack-room window, and this contained a few grains of white powder, which I, of course, retained for analysis. The vomiting and purging continued incessantly till he died. A post-mortem examination, by order of the coroner, was made at twelve o'clock, three hours after death. The brain, heart, lungs, and kidneys were found healthy; the liver congested and slightly enlarged. The stomach and its contents were removed for analysis. On opening it, the mucous membrane was found highly congested and curiously corrugated, as if the muscular coat had been irritated and contracted. The contents of the paper were first analyzed by Mr. Reynolds and myself. On testing the white powder found in the paper, we readily detected it to be oxalic acid, and all the usual tests for the discovery of this poison gave distinct evidence of the nature of the powder The contents of the stomach were then, after the usual tedious process of boiling and separation, put to the same tests, and gave similar results; so that we had no hesitation in pronouncing the poison taken to have been oxalic acid."—(*Lancet*, and *Dublin Medical Press*, December 26, 1860.)

II.—*Poisoning by Green Paper Hangings.*

On the ninth instant an inquest was held at Highbury, touching the death of Clarence W. King, aged three and a half years. The evidence of the father and the nurse having been given, the medical attendant of the family, J. B. Metcalf, Esq., M.R.C.S., was examined, who stated that he was called to visit the child on Thursday morning, the first instant, being informed that it was in a fit. On his arrival, the convulsions had ceased, but the little boy was in a semi-comatose state. He learned that the child had felt chilly, and had been sick; had refused his breakfast, and, therefore, had taken nothing since his supper on the previous evening. He had fallen from the sofa, two or three days previously, and there was a very slight bruise apparent on the forehead. In the evening the symptoms seemed to be somewhat relieved by the remedies administered, but during the night he became excessively restless; and another child (a little sister) being also seized with convulsions, followed by violent screaming and copious dysenteric discharge from the bowels, the medical gentleman was again sent for, and, on his arrival, found the child first affected in a state of collapse. Thinking the appearance suspicious, and the more so because, three months before, these children had been almost simultaneously attacked in a similar manner, he began to search more minutely into the causes likely to have given rise to these seizures, and discovered that they had, during the last few days, been playing with their toys in the cupboard of the breakfast-room, which room was papered with a green flock paper; that, two or three days previously, they had been amused by helping to clear out one of these cupboards, and that the little boy had sucked a piece of lace which he found among the books and toys there. These circumstances seeming to confirm his suspicions, he directed the evacuations to be preserved, and sent them to Dr. Letheby for analysis. Meanwhile every effort was made, by the application of warmth, administration of ammonia, and constant supplies of warm milk, to rally the little sufferer; but of no avail. Alternations of repose and violent tetanic convulsions continued during the day, and he died thirty-eight hours after the commencement of the attack.

A post-mortem examination was performed, and the stomach, with its contents, part of the liver, and the sigmoid flexure of the colon, were forwarded to Dr. Letheby, and at the same time, portions of the green paper.

Dr. Letheby's report was as follows: "The paper is colored with arsenite of copper, or Scheele's green, and it is so loosely attached to the surface, that it brushes off most readily. The quantity of poisonous pigment amounts to nearly one-third the weight of the paper, and, therefore, it is highly dangerous in its nature. I have examined the stomach, and find that it contains distinct evidences of arsenic; so also do the liver and the evacuations; but the quantity of poison in the last two is not nearly so large as that in the stomach."

The coroner remarked that he and a son had experienced headache from sitting in a room hung with such paper; and he having summed up, the jury returned a verdict to the following effect: "That Clarence William King had been poisoned from the inhalation of arsenical fumes, which had escaped from the green paper of a certain sitting-room, and that the manufacturer of such paper had been guilty of very careless and culpable conduct."—(*Dublin Medical Press*, November 28, 1860.)

III.—*The Antagonism of the Woorara Poison to Strychnine.* By M. VELLA.

The experiments of M. Claude Bernard having demonstrated the peculiar property possessed by woorara, of paralyzing the motor nerves, the idea of employing it in tetanus, a disease of an essentially convulsive character, suggested itself to M. Vella, of Turin, and the results of very frequent experiments (nearly one hundred in number) have enabled the latter physiologist to establish his theory of the neutralization of the tetanic effects of strychnine, by the gradual injection of a solution of woorara into the veins, the jugular being the vein selected.

The experiments may be arranged into two groups. The first, in which the animals which had been poisoned by the ingestion of strychnine into the stomach, received into the blood (by injection) successive doses of woorara, from the period when the tetanic symptoms became manifest, in such a manner as to completely neutralize the toxic action of the former poison, and to perfect the re-establishment of a healthy state. In the second series of observations, M. Vella injected into the blood of certain animals a mixture of strychnine and woorara, which was attended with no ill consequences; while other animals, placed under similar conditions, died from an equivalent dose of strychnine unmixed with woorara.

Lastly, for the purpose of testing the value of his deductions, M. Vella allowed the animals, which had resisted the action of the strychnine when neutralized by the woorara, to remain at rest for some days, and then, placing them as nearly as possible under the same physiological conditions, administered, without subsequently injecting woorara, a similar dose of strychnine to that which had been employed in the previous experiments; the consequence was that these animals always rapidly succumbed to the effect of the poison.

M. Vella's observations have clearly established the fact that woorara is an antidote to strychnine, a circumstance which must be owing to the antagonism which exists between these two poisons, as a very careful examination by M Piria, a distinguished Sardinian chemist, shows that no chemical change results from their admixture.

We cannot finish this notice of M. Vella's experiments, without a reference to the laborious investigations of Dr. Harley, of University College, in connection with the action of the woorara poison in cases of tetanus and of poisoning by strychnine, which were commenced at as early a period as 1856, and which have led that observer to the same conclusions as M. Vella.—(*London Medical Review*, November, 1860.)

IV.—*Poisoning by Cyanide of Potassium.*

A man, engaged in photography, aged thirty-six, took a draught, prepared by himself, on the 18th of December, 1858. After taking the fluid, he suddenly died. At the post-mortem examination, the external surface of the body was blanched; the death ecchymoses were well marked; the blood everywhere in the body was dark and fluid; the brain and lungs were hyperæmic. The mucous membrane of the stomach and intestines exhibited throughout no unusual appearance, (*keinen regelwidrigen Zustand.*) There were submitted, for analysis, one white medicine-glass, containing a colorless fluid, and two other glass vessels, containing the intestines. The fluid number one showed evidence of potassa and of hydrocyanic acid. The contents of the stomach consisted of a gray, dark-colored fluid, of a tolerably strong acid reaction; it had not in the least the smell of bitter almonds, but a disagreeable odor of putrefaction. The fluid parts strained off, the solid parts were found to consist of half-digested food. The fluid part was searched for cyanide of potassium. It was distilled, after addition of sulphuric acid. The fluid contained hydrocyanic acid, which was separated by the distillation; together with this acid, which was only in small quantities, there was also formic acid and fat acids.—(*Maschka, in Vierteljahrschrift*, Band ii. No 17, 1860; and *British and Foreign Med.-Chir. Review.*)

V.—*Poisoning by Fungi.*

On the 25th of October, 1859, some fungi were served up at the breakfast of the lieutenants and ensigns in the garrison at Corte, which one of them had collected, the previous evening, in a wood of chestnut trees. Before preparing them for table, the steward had expressed his suspicions upon these fungi, but the officer insisted upon their being served up. Six officers ate of these fungi, which had preserved their natural color, and all remarked that they were *very salt*. Toward eight o'clock in the evening, ten hours after their consumption, the six officers were seized with vomiting. All believed this was due to indigestion, and they did not think of the fungi until two hours afterward. In a short time the vomiting was accompanied by colic. A medical practitioner prescribed for each of the patients an emetic draught and purgative injections. The invalids had a bad night; the vomiting and colic continued, and they experienced cramp and a burning heat at the epigastrium. Five of the officers had then recourse to various empiric remedies, which were extolled in the country. One of them, better advised, followed a rational treatment. This officer alone survived the horrible catastrophe. Four of the invalids went into the hospital three days after the poisoning. The treatment adopted especially consisted in infusions of coffee, varied frictions, mustard poultices, and purgative injections. Three sunk at the end of three days. These invalids exhibited alternations of cerebral excitement and coma. M. Chevrel has published four interesting notices on this case of poisoning, which he attributes to the spurious orange agaric, (*agaricus muscarius* of Linnæus, *amanita muscaria* of Greville.) The Army Board of Health, in consequence of this unfortunate accident, have drawn up instructions relative to edible and poisonous fungi, which we think may be profitably consulted by pharmaceutists.—(*Journal de Pharmacie*, November, 1860; and *Dublin Medical Press*, January 9, 1861.)

PATHOLOGICAL ANATOMY.

BY JOHN H. PACKARD, M.D., OF PHILADELPHIA.

I.—*Three Cases of Softening of the Pons Varolii.* By DR. J. W. OGLE. (Reported to the Pathological Society of London.)

(1) R. H., a man aged forty-five, had been for several years subject to attacks of dyspnœa; they had lately become more troublesome, and he had complained of headache and depression. One morning he said that he had pains in the occiput, and a strange feeling in his feet. The pain increased, and he was taken to St. George's Hospital; he had trembling in all his limbs, and immediately became unconscious. Volition and sensation were alike lost, and the limbs were relaxed. The pupils were at first equally dilated, but the left one afterward became much the smaller. He died an hour and a half after his admission.

"On post-mortem examination, the cranial bones and cerebral membranes were natural; the vessels of the scalp and membranes were much distended with blood; the brain itself was natural as regards its upper part. On section it was found, however, that in the pons Varolii, extending across almost the entire width of the organ, and actually bursting through the surface of the *left* side, was a large extravasated mass of blood. This occupied about the superior three-fourths of the substance of the pons, approaching so near the band of the fourth cerebral ventricle as to give way into it on very slight pressure. The inferior fourth part of the substance of the pons Varolii (the portion, that is, close to the occipital bone) was natural in appearance. This extravasated blood extended so as to touch the upper part of the medulla oblongata. It was, moreover, continued downward into the central part of the right crus cerebelli, reaching into the cerebellum. A few large vessels at the base of the brain were atheromatous, but only slightly so. Microscopical examination did not reveal evidence of any softening or alteration in the capillaries of the neighborhood."

(2) J. C., a man aged fifty, had been in St. George's Hospital for about six weeks, with pleurisy. He was discharged pretty well, but subsequently had a

"fit," and was found on the floor insensible; soon afterward he became hemiplegic, and was readmitted into the hospital, with complete loss of sensation and voluntary motion on the left side. The limbs were quite lax, the right eyebrow and corner of the mouth depressed, and articulation lost. His urine had to be drawn off daily, and became slightly albuminous; coma set in, and he died.

"On post-mortem examination, it was found that much subarachnoidean fluid existed, and the brain was what is often termed 'wet.' The cerebral hemispheres, and the fornix and central parts, were natural; the pons Varolii was, however, very much softened in the centre, the softened part being of a cream color and easily washed away. The basilar artery was very atheromatous, and was also *irregularly dilated.* All the large arteries of the brain were also atheromatous. Moreover, in one of the cerebellar arteries was a block of fibrin, tolerably firm and blood stained, completely obstructing it. The heart's walls and its valves presented nothing worthy of remark; there was a largish blood-clot in the left ventricle. The lungs were healthy; no pleural adhesions existed. The kidneys were slightly congested. Other organs natural.

"*Remarks.*—It is worthy of note that in this case, while a full plugging of a cerebellar arterial branch existed—causing, no doubt, the atrophic softening of the anterior part of the pons Varolii,—yet nothing like fibrinous fringes or deposits were found on the valves of the heart or their appendages. Of course there can be no doubt that 'such may have previously existed, and have been removed.'"

(3) W. R., a plumber, aged fifty, had had two attacks of lead colic, the first twenty years ago, the other some years later. After the second he had a fit, lost consciousness, and was very violent for twelve hours; his recovery from this was perfect, and he remained well except for occasional pains in the limbs. "On the day of admission, while on a scaffold, in the *recumbent position,* painting a roof, he was seen to roll off, and was found insensible. On admission, the surface was warm, excepting the right leg and foot, the temperature of which was much lower, and the superficial veins of which were more turgid than on the other side. There was decided lead gum-line. Suffocation was produced in attempts to swallow, and the left aperture" (ala?) "of the nose was more sunken than the right one. No movements of the alæ nasi existed during respiration. The impulse of the heart was very great, and visible pulsations existed in the right carotid and subclavian, while the left carotid could hardly be felt. No tremors existed, but frequent tetanic spasms, between which the muscles of the limbs were very rigid. There was total loss of voluntary power, and of sensibility of the skin. Much reflex action on tickling the sole of the left foot, but not so on the right side. The right pupil was dilated and oval; subsequently, the left became dilated. The tetanic spasms and muscular rigidity ceased, and the patient gradually died, the right pupil becoming more dilated than the left.

"At the post-mortem examination, a very large extravasated clot of blood was found in the substance of the right cerebral hemisphere, and also filling the third and fourth ventricles. Moreover, there was a small quantity of extravasated blood and some degree of softening in the centre of the pons Varolii, where also some of the veins were very large and dilated. The arteries of the base of the brain were very atheromatous. The left ventricle of the heart was much hypertrophied. The kidneys were atrophied and granular. The liver contained a large hydatid cyst.

"*Query.*—How far was the difference in the pulsation of the blood-vessels in this case attributable to modification of vaso-motor influence, the result of central nervous injury—or to rigidity of muscle affecting the large vessels by pressure?"—(*Lancet*, December 29, 1860.)

II.—*Tubercular Disease of the Walls of the Heart.* By DR. DA COSTA.

A colored boy, aged fourteen, had been an inmate of the Blockley Almshouse for several months. He had undergone resection of the elbow, and subsequently amputation of the same arm, for strumous disease. On the left side of his face he had a scrofulous tumor involving all the larger salivary glands, with a fistulous opening over the jaw. He was transferred from the out-wards to the Hospital, May 7th, 1860, and died three days afterward, having complained only of weakness, with a trifling cough, and some shortness of breath.

At the post-mortem examination, tuberculous deposits were found at the apex of each lung, and pleuritic adhesions on the left side. The liver was enlarged, and of the ordinary "nutmeg" appearance. The brain was soft, and its ventricles contained a good deal of fluid. Serum also existed in considerable quantity in the abdominal cavity.

But the most interesting lesion was observed in the heart. "The walls of the right ventricle possessed somewhat more than their normal thickness. In parts no muscular substance at all remained, the entire wall having been converted into a yellowish or cheesy mass lined on each side by serous membrane. In other portions there was a thin layer of muscle. The right auricle was in the same state. The left auricle and ventricle were much hypertrophied; the wall of the latter measured in parts nearly three-quarters of an inch; here and there only it contained a few deposits. There were more in the left auricle. The endocardium was smooth; but from the lining membrane of the lower portion of both ventricles sprang delicate villous growths. The valves were sound. The papillary muscles did not seem to have been involved in the disease. The pericardium was in a few spots slightly raised by the deposits under it; but the membrane itself was not roughened. It was only at the back of the right ventricle, and near the auricle, that there existed a few scattered tubercles on the surface.

"Microscopically examined, the muscular fibres on the right side were found to be very granular, their markings indistinct; some of them were covered with oil-drops. The latter were also detected in the yellowish masses, in addition to granules, and many small non-nucleated cells. No fibrous tissue was seen in the field of the instrument."

Dr. Da Costa stated that "he had met before with cases of tubercle of the pericardium, but never with tubercular formation in the walls of the organ. It was strange that the pericardium should have been so nearly healthy. In most of the cases of tubercle of the heart recorded (and they are not many) the morbid matter is formed on the external surface, and then becomes gradually imbedded in the muscular substance."

He also remarked upon the slight and recent character of the tubercular deposits in the lungs.—(*Proceedings of the Pathological Society of Philadelphia*, in the *Am. Journal of Med. Sciences*, October, 1860.)

III.—*Popliteal Aneurism; Rupture of the Aorta; Sudden Death.* By Prof. A. B. D'ALMEIDA, of Oporto.

John Oliveira, aged forty years, a blacksmith by trade, entered the infirmary of the Surgical Clinic on the 24th of February, 1859. He had scars from buboes in either groin, and other marks of a syphilitic taint. In the right popliteal space there was a tumor as large as a fist, having all the characters of an aneurism; this had been perceived for the first time five weeks previously.

Digital pressure, and the indirect pressure recommended by Broca, were alternately employed for some days; but on the second of March, after breakfast, he suddenly turned pale, and died in about five minutes.

An autopsy made the next day showed distention of the pericardium by about two pounds of blood, partly coagulated. The cavities of the heart were healthy, but its tissue was somewhat soft. An opening had occurred from the aorta into the pericardial sac, close to the origin of one of the coronary arteries; here an ulceration, involving all the coats of the aorta, was observed. The coats of all the large vessels seemed considerably softened.—(*Gazeta Medica do Porto*, October, 1860.)

(For a case very analogous to the above, see the Abstract of Path. Anatomy in the January number of this REVIEW.—P.)

IV.—*Empyema with Consecutive Pneumothorax, without Perforation of the Pleura.* By DR. KELLER.

A male child, aged ten months, had suffered for several months with diarrhœa, a hacking cough, and fever. Dr. Keller saw him on the 19th of August, 1860, and noted dullness over the whole of the left chest, with entire absence of respiratory murmur: the right side being normal. On the nineteenth of September, a clear, hollow sound was detected over the upper anterior part of the left lung; respiration had not returned. There was now less cough, but the dyspnœa was greater; the diarrhœa increased, and the child was seen in a dying condition on the twenty-fourth.

At the post-mortem examination, no communication could be made out between the pleural cavity and the air. "In opening the left side of the chest a distinct hissing from the escape of compressed air was heard. The heart was pressed toward the right side. The cavity of the left side of the chest was half empty, the other half containing about six ounces of thick, white pus. The lung was pressed against the spinal column. The pleura seemed to be very much thickened, and partly covered with a thin layer of exudation. The tissue of the lung was normal, but contained not a trace of air. The upper lobe of the right lung was pale, and emphysematous at its edges. The two lower lobes were gorged with blood and serum, particularly at their posterior portions. The smaller bronchi of the right lung contained a thick catarrhal secretion. The heart, liver, spleen, kidneys, and bowels were extremely anæmic. The stomach contained a quantity of coagulated milk and liquid food; its fundus was changed into a gelatinous mass yielding to the least touch."

Dr. Keller thinks that the disappearance of the exudation in this case must have been due to absorption, and quotes Dr. Graves's opinion that the loss of blood necessitates an absorption of air into the vessels, which air may be again secreted into any part of the body. But, as he remarks, the absorbing power of blood for gases is greater than that of water by nearly one-third; so that the more watery the blood, the less air could it take up.—(*Proceedings of the Pathological Society of Philadelphia*, in the *Am. Journal of Med. Sciences*, January, 1861.)

V.—*Congenital Deficiency of the Diaphragm; Malposition of the Viscera.*

By THOMAS ROBINSON, M.D.

Mrs. M. was delivered of a male child, apparently at full term, February 8th. 1860. The child, when born, presented a blue aspect, which soon became intense. It lived only a few minutes, and made during life ineffectual efforts to breathe, but without heaving movements of the chest—a point which was particularly observed. Percussion was dull all over the thorax; the abdomen was hard and full, and no meconium was evacuated.

A post-mortem was made forty hours after death. "The body was intensely cyanosed. Anteriorly, the thymus and heart occupied the right side of the thorax. The pericardium being opened, the heart's apex pointed to the left side; the vessels were normally arranged. On drawing the heart forward, a small lung, in an unexpanded fœtal condition, was seen occupying the space corresponding to the angles of the ribs and vertebral column of the right side. The left side from the clavicle to the half chest was occupied by the small intestines; in juxtaposition with these lay the spleen, which was in contact with the thymus gland with its right border, separated below by a rudimentary left lung, —a thin triangular-shaped body, measuring scarcely an inch in its longest direction. The lower half of the left chest cavity was filled by the left lobe of the liver, the stomach, and other parts of the intestines; the latter being to the left, the liver next, and the stomach adjacent to the pericardium and below the spleen. The diaphragm was deficient of the left tendinous part, admitting part of the left lobe of the liver and other viscera mentioned, through the space. The left crus was present, and formed a pillar, round which the œsophagus curved to rise to the stomach. The greater curvature of the stomach was superior. The right half of the diaphragm was normal. The right lobe of the liver was large, and with the kidney occupied entirely the right side of the abdomen. The left side was filled by intestine and kidney, the colon being wholly on the left side, ascending on that side of the spine into the thorax. There was no other malformation or displacement.

"Comparison with the lower vertebrata shows with tolerable clearness that this was a case of arrest of development of the diaphragm; this muscle being developed from circumference to centre, and not existing in the early life of the human fœtus, the condition permanent in birds, reptiles, and fishes. The cetaceous and amphibious mammalia have an imperfect diaphragm, approximating that of birds, which consists of bands of muscular fibres passing from the ribs to the pleura. In the porpoise there is no central tendon; resembling early life in the human fœtus and some cases of congenital deficiency. Fishes have a muscular septum between the branchial apparatus and abdomen. The true mammalia alone have a genuine diaphragm."

In connection with this very interesting case, Mr. Robinson refers to twenty-four published observations of an analogous character, and gives a tabulated statement of them. In one instance, although the diaphragm was entirely absent, life was prolonged seven years.—(*British Medical Journal*, November 3, 1860.)

VI.—*Cancer of the Œsophagus.* By MR. WOODMAN.

John G., aged sixty-two, was admitted into the London Hospital under Dr. Davies, October 9, 1860. He was much emaciated, and unable to take any solid food whatever, vomiting the greater part even of any liquid taken by the mouth; his first complaint was about three months previously, when pain and difficulty in swallowing came on. There were no signs of aneurism. A week after his admission, a little blood was found in the fluid vomited by him; and this was noticed daily for four days, when a sudden and copious discharge of bright-colored blood (about three pints) destroyed his life.

An autopsy was made, twelve hours after death. " Heart small, all its cavities contracted. On tracing the aorta to that part of the descending portion underneath the left bronchus, the portion in contact with the œsophagus was found split on its outer surface, to about a third of its circumference, and a lamina about two lines in depth, and corresponding to the split, was separable for about one-third of an inch on either side. Its margins toward the split were frayed, and the corresponding part internally had a small pin-hole aperture, surrounded by a blackish margin, easily lacerable. On removing the œsophagus at the part contiguous to the diseased portion of the aorta, a cancerous mass (scirrhus) was found, which had ulcerated through at this part, and on opening it, it was found to implicate the whole circumference of the œsophagus, admitting only a goose-quill, very dense and ragged, and about half an inch in depth. The bronchial glands were much enlarged, and one of them was occupied by a calcareous deposit, as big as a hazel-nut. There was no erosion of the trachea or bronchial tubes."—(*Medical Times and Gazette*, December 29, 1860.)

VII.—*Cancer of the Liver.* By DR. CHARLES C. LEE.

Richard Johnson, a Dane, aged forty-seven, was admitted into the Philadelphia Hospital, July 24, 1860, with enlargement of the liver. He said that his abdomen had begun to swell only five weeks previously, and that he had never had remittent fever, or any form of hepatic disease. Treatment had no effect, the enlargement steadily progressing; on the first of August he began to fail, and died on the eighteenth, having suffered no pain, and free from jaundice until the day before his death.

At the autopsy the heart was found very soft and fatty, its right side full of firm yellow fibrinous clots, entangled among the fleshy columns, and apparently of *ante-mortem* formation. About f℥ij of serum existed in the pericardium.

"Nearly three pints of limpid serous effusion were found within the peritoneum, but nothing abnormal in the stomach or intestines. The liver was enormously enlarged, completely covering the stomach, and extending deeply into the left hypochondriac region. It weighed fourteen pounds, and measured sixteen inches and a half across the under surface from right to left; the right lobe was twelve inches long and five thick. The proper hepatic structure was in great measure displaced by circumscribed deposits of medullary cancerous tissue of a yellowish-white color, marbling the surface in a beautiful manner, and rising into nodules in every direction, but so soft as to be easily compressible, and imperceptible through the abdominal walls. The microscope revealed in this structure no fibrils, but numerous caudate and multiform cells, evidently of the cancerous type, intermingled with a few hepatic cells, the former greatly preponderating in number."—(*Proceedings of the Pathological Society of Philadelphia*, in the *Am. Journal of Med. Sciences*, January, 1861.)

VIII.—*Abscess of the Liver Opening into the Right Lung.* By DR. S. W. MITCHELL.

J. S., aged thirty-seven, had been more or less ailing for two years past, with symptoms of pulmonary irritation. In March, 1860, he had an attack of acute hepatitis. In June he was surprised at a sudden increase of his previously slight cough, with a very copious purulent expectoration. Dr. Mitchell saw him on the twenty-third of July.

He was then spare and a little sallow, but not jaundiced; his strength was not much impaired, his tongue clean, his appetite and digestion good. He attributed his ailments to the foul air to which he had been exposed while in Nashville, Tenn., two years previously; there having been a large drain and some water-closets close by the printing-office in which he was engaged. Dullness on percussion was noticed over the lower lobe of the right lung in front, and over the side and back as far up as the scapular spine. At the lower angle of the scapula there were the usual signs of a cavity. Mr. S. died from exhaustion, on the twenty-ninth of August.

The autopsy was made by Dr. Kane, in presence of Drs. Meigs and Packard. Firm white clots were entangled with, and closely adherent to, the columnæ carneæ and chordæ tendineæ of both sides of the heart, the muscular fibres of which organ were much softened.

"The inferior lobe of the left lung was studded with miliary tubercles. It was much congested, and of a deep-red color. The upper lobe, though congested, was less so than the lower, and contained no tubercles. The upper lobe of the right lung contained several small cretified tubercles, but was otherwise healthy. The lower lobe was completely riddled by an anfractuous vomica. What remained of its substance was much softened and of a dirty-brown color. The pleura round this portion was much thickened; and immediately above, its two surfaces were closely adherent, thus forming a circumscribed empyema connected with the abscess of the lung.

"The liver was almost double its normal size, its left lobe extending so far into the left hypochondriac region as to press strongly against the spleen. A rough measurement, made before removing the organ from the abdomen, gave ten inches as the vertical diameter of the right lobe, nine inches as that of the left, and eleven inches as the transverse diameter of the entire viscus at its central portion. The upper left angle of the left lobe was the site of an abscess about as large as an ordinary hen's egg, which bulged outward so as to press strongly against the diaphragm, and was filled with thick, homogeneous, yellow pus. The right lobe was firmly adherent to the right wall of the abdomen and to the diaphragm, but especially to the right abdominal wall. An abscess as large as a Sicily orange occupied the upper portion of this lobe. It was filled with thick, whitish pus, and did not communicate either with the other abscesses in the liver or with the lung. A third abscess, nearly as large as a hen's egg, existed in the lower portion of the right lobe of the liver. This abscess communicated, by a large opening in its posterior wall, with the gall-bladder, which was firmly agglutinated to the liver, and was much distended with thick, greenish pus. The walls of the gall-bladder were much thickened. The cystic duct was entirely occluded by the pressure of an enlarged gland. The hepatic duct was unimpeded, as was also the common duct, which we traced to its opening in the duodenum.

"We had considerable difficulty in detecting the opening of communication between the liver and the lung, which was not, as might have been expected, above, from one of the large abscesses pressing against the concavity of the diaphragm, but by a small canalicular opening connected with the abscess in the lower portion of the right lobe, which pierced the liver low down at about the junction of its right lateral and posterior surfaces, and allowed the pus to escape. This, being circumscribed by lymph, had burrowed upward, and perforated the diaphragm at its attachment to the ribs anteriorly, thus opening into the circumscribed empyema in connection with the anterior surface of the right lung. There was considerable general peritonitis, especially in the ileo-cœcal region; but the stomach and intestines appeared healthy. The spleen was normal; the kidneys enlarged and pale."—(*Proceedings of the Pathological Society of Philadelphia*, in the *Amer. Journal of Med. Sciences*, January, 1861.)

IX.—*Ulceration and Stricture of the Colon.* By DR. ALONZO CLARK.

A gentleman, sixty-six years of age, who had for some time complained of insufficient alvine evacuations, and who, in October last, suffered from painful constipation, underwent great fatigue on Christmas day, and was obliged to take to his bed. His chief symptom now was constipation, with pains in the bowels, which pains were most marked in the right iliac fossa. For several days he remained in much the same state, but then severe pain occurred, and abdominal swelling and tenderness was left behind it. No motion of the bowels could be procured, either by cathartic medicines or by enemata; it was evident that much of the swelling was due to gaseous accumulation. No vomiting took place from first to last; his pulse gradually became more and more frequent, till it rose to one hundred and thirty-six.

On the seventh day, at eight P.M., he complained of sudden pain, as if something had given way; and after this, the tympany was increased, the tenderness remaining about the same. Repeated injections at last procured copious discharges of fecal matter, but he gradually sank, and died on the 4th of January, 1861.

An autopsy was made two days afterward. The descending colon was found to be constricted at a point nearly opposite the lower extremity of the kidney, the constriction being of a dark color, very much as if black thread had been tied around the gut.

This constricted portion was carefully dissected out, and the intestine opened from above downward, and from below upward to the point of stricture; in this way it was ascertained that chronic ulceration had involved nearly the whole circumference of the bowel. "It seemed evident that this ulcer had been advancing in one part while it was cicatrizing in another, the consequence of which was a very marked contraction of the whole tube, so that the point of the little finger could barely be inserted into it. At the inferior verge of the obstruction was what appeared to be a vegetative" (?) "production, which grew directly out against the inferior border of the stricture, and in its natural position formed a sort of plug to the passage from below upward. Beyond this the colon presented nothing remarkable. At the cæcum and first portion of the ascending colon there was very great distention. Taking out the portion above and below, and tying up" (?) "the contents, we found them to be fluid in character, and, in the main, the same as the copious dejections that took place during life; but in addition to that, there were found in this sac cranberries unbroken, in I don't know what numbers. We picked out oats, with the husk on, and a great number of little flexible sticks of some sort or another, that had been taken by the mouth; the stem of an apple, etc. We afterward ascertained from the family, that he had eaten no cranberries for four weeks; they had no recollection whatever when he had eaten oatmeal gruel. But a curious circumstance noticed here was that the intestine had been ruptured upon its peritoneal coat, the surface had been rent a distance of fully five inches, and had slid upon the other tissues so as to leave a space between the rent edges equal to an inch and a half in width, and producing in the muscular coat which was thus exposed several little points of ecchymosis. At one spot in that denuded portion was a place not quite so large as a three-cent piece, covered with a grayish material, which, when scraped off, left a depression like an ulcer. There was also a corresponding appearance on the mucous surface of the intestine at the same point, so that there was left a mere film of areolar tissue, which was perforated with minute openings." Air and the fluid contents of the gut had passed through these orifices when the tube was squeezed, before it was laid open.

Very slight peritoneal inflammation existed, and less about the seat of the perforation than elsewhere. A great deal of fetid gas was contained in the serous cavity.

Dr. Sands examined the growth microscopically, and regards it as of the nature of epithelioma.—(*Proceedings of the New York Pathological Society*, in the *American Medical Times*, January 19, 1861.)

X.—*Fungus Hœmatodes of the Uterus and Ovaries in a Girl Twelve Years of Age.* By DR. CORSE.

This patient at first complained of vague abdominal pains, which did not yield to treatment. A tumor was then discovered descending far into the pelvis. The case progressed rapidly, and the abdomen became so enormously distended that tapping was performed, and three pints of a ropy, sanguineous liquid were withdrawn, with great relief. On microscopic examination, elements like those generally seen in cancer were found in this liquid.

The abdomen soon refilled; vomiting of matter like coffee-grounds came on, and she died, five or six weeks only from the first discovery of the disease.

"On post-mortem examination, the next day, a quantity of sanguineous fluid, like that obtained by the previous operation, was first evacuated; then a soft, pultaceous mass occupied the opening in the abdomen; and transverse incisions, laying open the abdomen in four flaps, showed the entire space filled with a soft cancer matter, even up between the stomach and diaphragm. The whole uterus and ovaries were in one soft mass, a part only of which would hold together to be removed. The once tolerably hard tumor had, as is usual with these growths, become quite soft with its increase in size. The greater part of the fungous growth was scooped out with a saucer, and we could then see that the walls of the abdomen were the seats of attachment for this matter; numerous tumors of all sizes, from that of a small shot to an inch or more in diameter, were found to be appended to the omentum and to the intestines and mesentery.

"The whole substance removed was placed in a common bucket, and weighed eleven pounds and a half. The fluid which escaped when the abdomen was opened was supposed to be about two pounds, and the portion remaining in the abdomen about one pound, making in all *fourteen* pounds and a half." Cancer was not known to have occurred before in the family.—(*Transactions of the College of Physicians of Philadelphia*, in the *American Journal of Medical Sciences*, January, 1861.)

Bi-Monthly Periscope.

OBSTETRICS.

OPERATION OF OVARIOTOMY; RECOVERY. By *Wm. H. Byford, A.M., M.D.*, Professor of Obstetrics, etc., Medical Department of Lind University.

Miss E., aged fifteen years, from Roseville, Illinois, was brought to me by her parents during May, 1860, to obtain advice respecting an abdominal enlargement of which she was the subject. An examination revealed a multilocular ovarian tumor of large size, occupying nearly the whole abdominal and pelvic cavities, and producing an enlargement exceeding that of pregnancy at full term. The history of the case was very obscure, and the little that was obtained was furnished by Dr. Young, of Monmouth, under whose care the girl had been for a few months. The mother informed him "that the child had always been peculiarly shaped, unusually short waisted, and the abdomen full, with a sensation of hardness. The catamenia first appeared at thirteen, and continued regular until some time during the past winter, when she missed two or three successive periods. At that time, the size increasing perceptibly and rapidly, she was first seen by Dr. Young. A thorough examination was refused, and only such a one permitted as could be obtained by palpation of the abdominal parietes. At a point corresponding with the position of the right ovary a tumor the size of a large orange was perceived, with evident fluctuation. From neither the mother nor child could any further facts be elicited. Under these circumstances hyd. potas., in combination with buchu and spts. ether. nit., were exhibited, and during that treatment the catamenia returned, though the tumor was apparently unaffected."

The tumor must have grown with unexampled rapidity during the time elapsing between the winter months and the following May, for at that time it was revealed most distinctly that the tumor was multilocular, containing at least seven cysts, which fact alone would make the case peculiarly unfavorable for the operation of puncture and iodized injections, for, besides the risk of severe constitutional irritation, there was the certain impossibility of reaching all the cysts, coupled with the uncertainty of obliteration of those sacs which could be reached by the trocar; while, on the other hand, the excellent general health of the patient, and the firm conviction that the case was not complicated with peritoneal adhesions, rendered the operation by incision and removal less hazardous in the performance and more certain in its results.

After due consideration, the operation of incision was resolved upon, and performed upon the 30th of May, by Dr. Byford, assisted by Drs. Young, Hamilton, McDill, and Taliaferro.

After having the room brought up to 98° Fahr., the patient was fully etherized and placed upon her back on the operating table; an incision through the abdominal walls, about midway between the umbilicus and symphysis pubis in the linea alba, three and a half or four inches long, exposed the tumor. This being done, I plunged a large trocar into it, and emptied one of the cysts of probably two pounds of thick albuminous transparent fluid. So soon as it ceased to run, I withdrew the trocar and introduced it into another sac, and so on, one after another, until eight cysts were evacuated, one of which contained eighteen pint cupfuls of liquid. The abdomen was now very much collapsed, and the tumor so much reduced in size that it was easily withdrawn through the incision. As it lay upon the table, the peduncle, which was about two inches broad, passed through the wound. Two strong silk ligatures were passed, one through each edge of the peduncle, near the tumor, in order to give us command of the stump after amputation. The écraseur was passed around the peduncle, between the ligatures and the ovary, and with it the mass was separated from its attachment. The stump was drawn between the lips of the incision, near its lower angle, and held in position by the two ligatures. Then silver pins, with steel points, were passed through the lips of the wound, passing near to, but not quite touching the peritoneum, and secured with thread as in hare-lip. A few fine silver-wire sutures closed up the wound superficially. Two of the silver pins used in transfixing the lips of the wound also passed through the stump of the detached tumor, and held its amputated margin a little above the level of the skin of the abdomen. A compress wet with cold water was placed upon the wound, all surrounded with a flannel binder, and the patient placed carefully back in bed. In about an hour she awoke from her sleep perfectly conscious, but entirely ignorant of what had occurred with respect to the operation, and expressed herself as perfectly comfortable.

The cysts and contents weighed thirty-nine pounds, and as it was an ordinary many-cysted mass, it would be unnecessary to give a particular description of it.

After the operation, the case, being some two hundred miles distant from Chicago, was left in charge of Drs. Taliaferro and Young. The case progressed favorably to the termination, with the exception of some considerable hemorrhage from the stump of the peduncle, which, however, was readily controlled by styptics. During the whole treatment, which continued until July fourth, at which time the case was discharged, the bladder acted naturally, the catheter not being needed once during the whole period. Dr. Byford concludes by summing up upon the mode of performing the operation.

I wish to make a very few remarks as to the mode of performing the operation.

It will be seen that there was no necessity of introducing the hand, or even the fingers, inside the peritoneal cavity. The whole mass was drawn through the wound by pulling upon the collapsed cysts, and there being no effusion of blood, or in fact anything else within the abdomen, the membrane was subjected to no rude handling, or other irritation, except what may have been produced by the entrance of air; and this was quite free, unavoidably. By drawing the stump through the wound, and placing the margin outside the abdominal cavity, the hemorrhage which often occurs, and did in this case from it, was external. The silver pins and wire produced as little irritation as anything else could. Although Dr. Young, in one of his notes, expressed regret that we had not ligated the stump, I would certainly not do so were I to operate again. The securing the stump in the wound made it impossible for the small sloughs, which are always thrown off from it, to irritate the peritoneum. It also, had we tied or clamped it, enabled us to avoid the inclusion of the ligature within the cavity. The écraseur is better for separating the tumor than a ligature, because, if the latter is used, the peritoneum must be strangulated and necessarily inflamed, and as inflammation spreads along this membrane with great facility, it may invade the abdominal cavity, and thus light up a fatal peritonitis. The hemorrhage that did occur, had it been suspected, could doubtless have been easily checked, and a little vigilance, I think, would render this operative procedure as safe as such an operation in the nature of things can be.—(*Chicago Medical Examiner*, July, 1860.)

Editors' Table.

Women who Practiced Medicine in Ancient Times.—In our brief analysis of the major part of Dr. Rouyer's treatise,* we intimated our intention to notice, at a future day, the final chapter, which bore for title, "*History of Women who have Practiced Medicine.*" Our remarks on the subject, at this time, will be chiefly based upon said chapter of the work in question.

From the most remote antiquity, or, more correctly speaking, from the earliest period of historic record, and anterior to it, again, of mythical story, women have been engaged in the practice of midwifery, and even other branches of the healing art. Homer, Hippocrates, and Galen may be quoted to this effect. The popular belief interwoven with their mythology, shows the influence the Greeks attached to female interposition in the person of their goddesses, as aiding or superintending the labor of parturient females. Thus Juno, who occupies the first place on the list, was, under the names of Lucina or Lucinia, invoked by pregnant and parturient women. It is true that infants came into the world under the protection also of Jupiter *Diespiter.* After their birth the goddess *Cunina* watched over their cradle, and at a later period the *Carmentes* presided over their future destiny. During pregnancy the goddess *Genia Mana* was invoked to prevent the child being born feeble or deformed.

Coming to the heroic period, we find the names of a number of women connected with the healing art. The centaur Chiron, who was the preceptor of so many heroes and physicians, had a daughter Hippo, who was versed in medicine and pharmacy, which she afterward taught to Eolus; she was also skilled in the art of divination, as was her sister Ocyrsæ, who predicted the future greatness of Æsculapius. Epione, a daughter of Hercules, who had been himself one of the pupils of Chiron, was famed for her medical knowledge, which she inherited from her father. The women who figured during this age as adepts in the art of healing, had also the reputation of being given to sorcery. Among these we meet with Hecate, wife of Ætes, King of Colchis, and mother of Circe, Medea, and Angitia, who were said to have great experience in medicine. Hecate was well acquainted with the preparation of poisons, a knowledge which she turned to fatal account by poisoning her father, in order to secure for herself the succession to the throne. She discovered the toxical properties of aconite. Medea found antidotes to poisons, and gave proofs of supernatural power by turning men into lions, wolves, and swine. She was represented to be acquainted with everything relating to the art of medicine. She was very benevolent in saving men from threatened dangers, and acted the part of a dutiful wife in dressing the wounds of her husband, Jason, who was another of the pupils of Chiron. She incurred the imputation of boiling men to death—a prejudice against her which arose from her causing aged persons, and among others her father, to be immersed in the warm bath, from which they came out renovated, and, as was said, rejuvenated. In a more figurative sense, she restored to old men their youth by imparting to their gray hair a black tint. Circe, celebrated by Homer and Virgil, imitated the bad example of her mother, Hecate, by poisoning her husband, King of the Sarmatians, in order that she might rule alone. She was obliged, however, to fly the kingdom for this enormity, and take refuge in Italy. The fiction of the transformation into swine of those who drank from the cup offered by Circe, is generally received as typical of those who make beasts of themselves by getting drunk on alcoholic liquors. Many of the female members of the family of Æsculapius obtained credit for attainments in medicine. It is probable that the various names given to the daughters of the god of medicine, as well as to his wife Epione, were used in a figurative sense, to imply health, cure, and strength. Medals were struck and statues raised to their memory by their grateful patients. Helen, the fair and frail wife of Menelaus, whose elopement with Paris cost Troy so dear, and enriched literature for all time with the Iliad, had some knowledge of medicine. Helenium was named after her; and she was said to be acquainted with the exhilarating properties of the nepenthes. Œnone, the unhappy wife of Paris, was also acquainted with plants; but she refused to apply the remedies of which she alone was the possessor to treat the wounds of Paris; although, woman-like, she afterward, on his death, killed herself in despair. Machaon, who played soldier as well as surgeon at the siege of Troy, was glad to avail himself of the services of Acamede and Hecamede, to dress his wound.

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* Etudes Médicales sur l'Ancienne Rome.

Escaping from the gray morn of the heroic age, with its dimly seen outlines of humanity, we come to the clear day of history. At Athens men were engaged in the practice of midwifery, but in a limited degree, and only casually. This circumstance explains, according to some commentators, why we meet in the books of Hippocrates such scant notices of obstetrics. To this statement it has been objected, that women were prohibited from the practice of medicine by an express law of the State. But if such a law had ever existed it was not allowed to be long in force, and was repealed in compliment to Agnodice, who studied midwifery under a certain Herophilus, or Hierophilus. After her novitiate had expired, she determined to don the male attire, in order that she might not be subjected to the penalty of the existing prohibitory law against females practicing medicine. If any of her patients was backward in receiving her services she immediately revealed her sex, and took charge of the case without any further demur. The great popularity of Agnodice elicited the envy of the physicians, who accused her of corrupt practices and of being a debauchee, to procure whose visits the women would simulate diseases. When cited to appear before the Areopagus, she withdrew her tunic and convinced the assembly that she was a woman. Many of her sex now bestirred themselves in her behalf, and made a brief and pithy address to the Areopagites which was so effective as to induce them to repeal the old law.

Plato furnishes tolerably extensive information respecting the duties of midwives, in the dialogue between Socrates and Theetetes, in which the former asks his interlocutor: "Can you be ignorant that I am the son of a skillful and renowned midwife, Phenareta?" On the other replying that he has heard tell of the circumstance, Socrates continues: "Call well to mind all that relates to midwives. You know well that none of them can take a part in delivering women so long as they themselves continue to be mothers, and that they only follow this business after they have become incapable of conception themselves." "The practice is attributed to Diana, at least so it is said, because, without being a mother herself, she presides over child-births. She would not confide this employment to barren women; human nature being unequal to the practice of an art of which they could have no experience." Another remark of Socrates in this dialogue throws light on the ethics of the Greeks, in regard to abortion procured with the consent of the pregnant woman. In speaking of the functions of midwives, he says: "They are able, even, by remedies and enchantments, to bring on the pains of child-birth, as well as to moderate them, or to bring on abortion of the child, when the mother is determined to get clear of it." The great philosopher then adverts to midwives being the agents in negotiating marriages, on account of their being able to tell accurately what man and what woman it is proper to unite together, in order that they may have the finest children. "Well, be assured," he continues, "they are prouder of this talent than even of their skill in cutting the umbilical cord." Corrupt pretenders and intruders having usurped the agency business of the regular midwives, these latter, out of respect for themselves, declined matrimonial commissions, as not strictly pertaining to their legitimate office.

The Greek midwife was called on to give her attention to women during pregnancy, and during and after their confinement; she was also expected to furnish them with the necessary medicines and to indicate to them the hygienic rules to be observed during their pregnancy, and she took part, also, in certain ceremonies which were performed after child-birth. Uterine disorders, and all the illusory practices for treating sterility, were also among the attributes of this class. Moschion, one of the first authors who has written expressly on the diseases of women, specifies the requisite qualities in a midwife. She is to be preferred, "who has gone through literary studies, who is intelligent and has a good memory; she must be studious, alert, strong, free from impurity or disease, and be given neither to anger nor to broils. She must be, besides, compassionate, sober, modest, observing, quiet, prudent, and not a miser." No imperfect list of qualifications these, either for a woman or man practitioner of the art of midwifery. Moschion adds another condition, relating to their dress. She must be in male attire. "*Viriliter cuncta sit.*" In another place, Moschion, in reply to the question: How many assistants must the midwife have? says three; one on each side of the woman in labor, and the third behind her, so as to prevent her from turning herself in the wrong direction during the pains of labor. These assistants might, after a sufficient time, and knowledge of the practice of midwifery, become, themselves, midwives—

obstetrices. Aristotle, in his work on the history of animals, speaks of the necessary qualifications for a midwife, in order that she may be prepared to remedy the various complications that may present themselves during labor, and to cut the umbilical cord, an operation to which he attaches great importance.

The number of Greek midwives whose names have come down to us is small. We may cite these of Agnodice, already mentioned, Olympias of Thebes, Lais, Elephantis, Sotira, and Salpe. It is not yet determined by the critics whether Lais the midwife was, also, Lais the courtezan, who gave her favors to the philosophers Aristippus and Diogenes, and to Demosthenes the orator. Elephantis wrote on abortives and cosmetics, but neither these works, nor the very licentious ones of which she was the author, and which were read with such delight by Tiberius at Capri, have reached us. To the list already given we may add the names of Phenareta, the mother of Socrates, Antiochis, and Philista, sister of the philosopher Pyrrho, and, more celebrated than all, Aspasia. The question of the identity of this Aspasia with the mistress of Pericles and the favorite of Socrates, is generally replied to in the negative. Among the varied accomplishments of Aspasia of Miletus, specified by Lucian, in arts, philosophy, and science, no mention is made of her knowledge of medicine, nor of having written on midwifery. Ætius has preserved the titles of the fragments of the other Aspasia, on nine different subjects relating to the diseases of women, and displacements of the uterus, and attention after abortion. Of a still higher rank than any hitherto named by us, in the list of female practitioners of midwifery, is the celebrated Cleopatra, Queen of Egypt, who led Mark Antony into those luxurious indulgences and vagaries which probably cost him the rule of the Roman Empire, and allowed the ascendency of his more fortunate rival Octavius, afterward Augustus Cæsar.

The Romans, in adopting Greek manners and social usages, did not neglect to employ midwives. The first notice of this class of women in Rome is found in Plautus,* who speaks of a midwife complaining that she was not paid enough. *Tum obstetrix expostulavit mecum parum missam sibi.*—Terence, who came after Plautus, speaks also of midwives, in the comedy of Andria, in which reference is made to a midwife given to drink, and who on this account was not worthy of confidence. There were in Rome regular midwives—*obstetrices*, and others called *adstetrices*, a title which would seem to imply that they were aids to the first-mentioned class. There was yet another class called *sagæ*, whence the French *sage*-femme. The office of a *saga* was not well defined; the word was sometimes used to designate a sorceress or a magician, a go-between, a perfumer, and a midwife; but the word was never used in good part, and it was generally applied to those women who exercised those different vocations.

In reference to the *obstetrices* and their functions, we learn that a happy conception was prepared by the attentions of the midwife—*ab initio oriendum est.* Then, again, the growth of the fœtus was to be facilitated by an appropriate regimen. "*Brassicum comedunt ad fœtûs incrementum; ab-*

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* Miles Gloriosus.

stinent a sale et aquâ frigidâ. Lecticis vehumtur et equabus gravibus inequitant, etc." While no objection need be made as a matter of taste to the latter part of these directions, that pregnant ladies shall be carried on a litter, and ride on mares with foal, many would demur to abstinence from salt and cold water, and to the eating of cabbage as a means of aiding the growth of the child *in utero.* We shall not repeat the names of the various divinities appealed to on the several periods just preceding, during, and after labor, in order to render safe and easy the several changes at these times. The Roman midwife, as we learn from Pliny, made use of quite a variety of medicaments when labor was coming on, in order to prepare the genital passages for the easy expulsion of the fœtus. Of the superstitious observances required on the occasion, it will be sufficient for us to notice that one which forbade any person in the house to have his legs crossed, or his fingers interlocked, for if this were allowed the labor would be suspended.

On the midwife devolved the duty of washing the infant and giving it the earliest attention. Different liquids were used in different countries. At Athens, water was employed, and afterward oil. At Sparta, the child was washed with wine; and among some others of the people of Greece, by a refinement bordering on the sentimental, dew was had recourse to. The Cimbri employed snow for the purpose. Sometimes the ablutions were made in vases of a particular fashion. At Sparta the children were placed on a shield, with a lance near it, in order to show that they were devoted to the defense of the State. In the family of Julius Cæsar, the vase appropriated to the purpose was the back or shield of a turtle. When the father himself washed the child, this act was regarded as a proof of extreme love for his offspring. The functions of the midwife terminated after five days; and she then gave place to the nurse who was to suckle the child and to watch over it for a long period. In case of sickness the midwife was called in. For the most part the medication consisted of certain superstitious practices, such as applying amulets to the body of the child; and in order to give efficacy to these fashions, sacrifices were offered up to Juno-Lucina, and to Castor and Pollux.

On the third day after the birth of the child among the Romans, and the fifth day among the Greeks, a crown was suspended over the door of the house. At Athens an olive crown was so placed to announce the birth of a boy, and a woollen one for that of a girl. At Rome the crowns were made of laurel, ivy, marsh celery, and aromatic herbs. On the eighth day from the birth of a girl and in the ninth in the case of a boy, (*lustrici dies,*) a name was given to the child; and care was taken that this should be a decent one, for at a later period the bearer of a base or impure name was punished. Finally, on the third day from the naming of the child, it was formally registered by the inscription of its name, prenames, and surnames, and to which were added the date of its birth and the names of the consuls who were in office for that year.

The names of some Roman widwives have reached us: Fabulla Lybica or Livia is quoted by Galen, and Victoria, Salviana or Salvina, and Leoparda are mentioned by Priscian. Scubonius Largus bought of another of this class, named Africana, the knowledge of a secret remedy for colic.

We may believe that, in addition to

recognized midwives in Rome, there were women who were engaged in the treatment of diseases, and hence they were called *medicæ*, although the details on this point are not very explicit, if we except what St. Jerome says of a Roman lady, called Fabiola, who lived in the fourth century after Christ, and who founded a hospital in which she herself took charge of the sick. The pathology of the Roman times bore hard on the menstrual fluid, as something extremely damaging to all persons and things in the presence of the female during its flow. Wine became sour, plants sterile, the gloss of purple garments and the polish of mirrors were tarnished, and both steel and iron were corroded, bees were chased from their hives, mares miscarried, the edge of a razor was dulled in the hands of the barber. But, on the other hand, this diffusive influence sometimes did good, as, for example, if a woman who was menstruating walked round a field, all the grubs and destructive insects fell to the ground. Lais and Elephantis have written on this point, in very different strains; for while one asserts that fecundity is insured by taking of the ashes of burnt menstrual fluid, the other insists that sterility would certainly follow the use of this article. The safest course advised by M. Rouyer is not to believe either of these lady doctors.

What we know of the Jewish midwives is derived from the Bible, as, for instance, in the accounts of the childbearing of Rachel and Thamar. The same rich history tells us of the conduct of the Egyptian midwives in their declining to obey the cruel mandate of Pharaoh, that they should destroy all the male children of the Jewish women, of whom it would seem they had the charge on such an occasion. The Arabians had two orders of female practitioners, viz., *mulier medica*, regular doctors, and *mulier obstetrix*, midwife.

DIGITAL COMPRESSION IN ANEURISM.—In a recent number of the *Gazette Hebdomadaire*, we find the statement that M. Bouvier communicated to the Paris Society of Surgery two cases of traumatic aneurism, cured by digital compression, by M. Mirault, of Angers. The first case was that of a man, twenty-three years of age, who perceived a small tumor gradually develop itself at the bend of the elbow, after the operation of phlebotomy. The brachial artery was compressed, and a cure was effected in thirty-one hours. The second case occurred in a child, nine years old, in whom the origin of the temporal artery had been wounded by the bill of a cock, giving rise to a tumor about the size of a crab apple. As it was impossible to control the artery between the heart and the tumor, direct compression was made on the swelling at different times, and it was discontinued during the night. A cure resulted in eighty-five hours.

NEW MEDICAL JOURNALS.—The *Baltimore Journal of Medicine* made its appearance on the first of January, and will be issued bi-monthly, under the editorial management of Dr. Edward Warren, Professor of Materia Medica and Therapeutics in the University of Maryland. From the well-known ability of its editor, we bespeak for it a hearty welcome.

We have received the first two numbers of the *Berkshire Medical Journal*, a monthly issue of forty-eight pages, edited by Dr. Wm. Henry Thayer and Dr. R. Cresson

Stiles, Professors in the Berkshire Medical College. We take pleasure in placing it on our exchange list.

The *Medical Journal of North Carolina*, published under the auspices of the State Medical Society, has been entrusted to the editorial management of Dr. Charles E. Johnson and Dr. S. S. Satchwell.

The *Archives of Medicine*, edited by Dr. Lionel S. Beale, appears to be gaining favor with the profession, both at home and abroad. Part VI., which has just reached us, maintains the well-earned reputation of its predecessors, and contains, among other papers, a chapter in clinical medicine, by Dr. W. Ogle; cases of trephining in syphilitic diseases of the skull, by Mr. Henry Lee; a paper by Dr. John Ogle, on the so-called "false membranes" in connection with the coverings of the brain; a simple and accurate method of recording physical signs by Dr. Beale; and a good exposition of cellular pathology, by Dr. Duffin.

APPOINTMENT TO THE PENNSYLVANIA HOSPITAL.—Dr. Addinell Hewson has been appointed one of the surgeons to this institution, the post having been rendered vacant by the retirement of Dr. Edward Peace, who had filled it for nearly a quarter of a century.

NAVAL BOARD OF EXAMINERS.—A Naval Board of Surgeons, for the examination of Assistant Surgeons for promotion, will convene at the Naval Asylum, in this city, on the first of March next. The Board will consist of Surgeons James M. Green, J. M. Foltz, and C. H. Wheelwright, and Passed Assistant Surgeon John Y. Taylor, Recorder.

APPOINTMENTS IN THE PARIS HOSPITALS.—In consequence of the death of M. Després, and the retirement of MM. Ricord and Guersant, the following new appointments have been made: M. Giraldes, surgeon to the Children's Hospital; M. Follin, surgeon to the Salpetrière; M. Depaul, surgeon to the Foundling Hospital; and M. Broca, surgeon to the Bicêtre.

WORKS IN PREPARATION FOR THE NEW SYDENHAM SOCIETY.—In addition to works already published, the following are in course of preparation for the Society:—

Vogel and Neubauer on the Examination of the Urine: a Manual intended for the Assistance of the Practical Physician. Translated by Dr. Markham. With Lithographs and Wood-cuts.

A Year-book of Medicine and Surgery for 1860.

Frerichs's Clinical Account of Diseases of the Liver, vol. ii. Translated by Dr. Murchison. With Wood-cuts.

Casper's Manual of Forensic Medicine. Translated by Dr. G. Balfour, of Edinburgh.

Czermak's Monograph on the Laryngoscope and its Practical Applications. Translated by Dr. G. D. Gibb. With Wood-cuts.

Professor Donders on the Diseases of Accommodation of the Eye. With Notes by the Author. Translated by Dr. W. D. Moore, of Dublin.

Smellie's Midwifery. Reprinted, with Notes and Preface, etc., bringing the Work up to the present Standard of Knowledge. By Professor Simpson, of Edinburgh.

RICHARD J. DUNGLISON,
Hon. Local Secretary, Philada.

SIR BENJAMIN BRODIE underwent an operation for the extraction of cataract, on the twenty-first of January. The progress of the case was favorable, up to the latest accounts.

REPORT OF THE PRIZES OF THE ACADEMY OF MEDICINE OF PARIS FOR 1860.—The Academy Prize of 1000 francs, on "the Means of Avoiding the Accidents which may be Produced by the Employment of Ether and Chloroform, and the Best Methods of Remedying these Accidents," has not been awarded; but Dr. Faure is encouraged by the sum of 600 francs. The Portal Prize, on "Vascular Obstructions of the Circulatory System of the Lung," was not awarded; but to the authors of the only work which was presented, Drs. Charcot and Benjamin Bell, was given 600 francs, the value of the prize. For the Civrieux Prize of 2400 francs, on "the Influence of Chloro-anæmia on Nervous Excitement," there were sixteen competitors; but their memoirs were not adjudged worthy of the prize. Dr. Simon was, however, recompensed with 900 francs, Dr. Mordet with 900 francs, and Dr. Zurkowski with 600 francs, and four other competitors were honorably mentioned. The Barbier Prize was not awarded, none of the memoirs having fulfilled the required conditions. The Lefèvre Prize of 1500 francs, on "the Diagnosis and Treatment of Melancholy," was awarded to Dr. Semelaigne. The Capuron Prize of 1000 francs, on "Puerperal Paralysis," was carried off by Dr. Imbert-Gourbeyre. The Orfila Prize, on "Poisonous Mushrooms," was not awarded.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA.—We are in receipt of the first volume of the proceedings of this Society, an octavo of three hundred and seven pages, embracing the meetings of the body from the time of its organization, in October, 1857, up to the 8th of February, 1860. As the transactions originally appeared in the pages of the REVIEW, they are familiar to our readers, and it is, therefore, useless to say that they contain many valuable and interesting communications. Up to May 24th, 1860, the number of members was fifty, ten being corresponding, and forty resident members. This published volume bears sufficient evidence of the earnest purpose of the society, and shows that it is one of the best *working* medical organizations in Philadelphia.

THE EFFECT OF THE FROST UPON PUBLIC HEALTH.—We extract the following from the *London Observer:*—

"The late severe weather has fearfully affected the public health. The deaths in the metropolis during the last fortnight have been more than 700 above the average for the past ten years. The old especially have suffered. Many aged people, who might, humanly speaking, have survived for some years, have been cut off with terrible suddenness. The returns of the Registrar-General, when they come to be analyzed, will show a greater number of sudden deaths than have, perhaps, ever been recorded before in this country. The intense cold, in fact, paralyzed the whole system of persons stricken in years. The prevailing causes of death have been pneumonia, congestion of the lungs, and apoplexy. In the City of London the mortality has been excessive. The average number of deaths in the corresponding weeks of previous years have been 67; during the past week the deaths numbered 95, being only 7 less than the deaths in the week when the cholera was most fatal in the City of London, in 1848. Last Thursday week, when the whole of the metropolis was enveloped in a dense fog, large numbers of persons were struck down as if shot. Dr. Letheby, in his report to the City Commissioners of Sewers, says: 'the quantity of organic vapor, sulphate of ammonia, and finely-divided soot in the atmosphere was unprecedented. It amounted to nearly four grains in the cubic foot of air, and its effect on the eyes and the delicate bronchial membranes was most irritating. This is evidenced by the enormous amount of illness and mortality from acute pulmonary affections. Pneumonia, for example, has risen in the course of the last few weeks from only 1 death in the week to 11, the successive numbers being 1, 2, 5, 11, and bronchitis from 5 to 25 ' In the City of London, nevertheless, the cold has not been anything like so severe as in many other parts of the country, where the thermometer has fallen several degrees below zero; and it therefore follows, that if a less degree of cold has produced such a fearful increase of mortality, a still greater mortality may be expected where the cold was more intense. An instance of the effect of cold may be mentioned. A gentleman a few days ago was met in the street by a friend, who was so much struck by his appearance that he asked him if he was ill. 'No,' was the reply: 'I am quite well, only I should like a little more breath.' His friend insisted upon his going home, and put him in a cab. Arrived at home, he had no sooner laid down than he became delirious, and within twenty-four hours he was a corpse. The cold had struck on his lungs, and vital congestion had followed. The average anticipatory number of deaths for the week ending the twelfth instant, in the entire metropolis, corrected according to increase of population, was 1365. The actual number was 1707, showing an excess of 342; an increase almost unparalleled, except in the case of such an epidemic as cholera. But it is not merely the cold that kills, although it is the primary cause. During the long frost, thousands and tens of thousands have been thrown out of employment, and at the very moment when they require nourishing food and warm clothing they have far less of both than on ordinary occasions. The human frame becomes consequently debilitated, and rendered more liable to the effects of the cold. The poor cannot remain at home in their wretched dwellings; they wander about listlessly, and when the cold seizes them they have not sufficient stamina to resist it."

NECROLOGICAL NOTICES.

Dr. John W. Francis.—It is not the medical world alone which mourns the death of Dr. Francis, which took place on the eighth of February. So varied were his attainments and so versatile his genius, that his loss will fall with equal severity upon the social and literary, as well as medical circles. No one who knew him can ever forget the gentle, courteous manners and genial intercourse which characterized his daily demeanor during a life of seventy-two years.

Dr. Francis was born in New York City, on the 17th of November, 1789, of German and Swiss parentage. He entered Columbia College in 1807, and at the same time commenced his medical studies under Dr. Hossack, whose partner he subsequently became. He was graduated in 1811 by the College of Physicians and Surgeons, being, as we are informed, the first person upon whom a degree was conferred by that institution. His career as a practitioner and lecturer was eminently successful. No one was better calculated to enchain the attention of his audience, both from the elegant fluency of his diction and the many anecdotes with which he interspersed his discourse. He possessed a lively and keen sense of the humorous, and his fund of wit seemed of Protean fertility, always ready to burst forth, and charming every one with its prodigality of quaint conceits, and brilliancy of repartee.

As a physician he was greatly beloved, and the amount of gratuitous practice in which he engaged would seem incredible to those who, from personal experience, were not able to testify to the untiring charity and benevolence which guided his heart through life. The poor and afflicted were always sure of meeting with a warm response to their appeals, and a hearty endeavor to do his uttermost in alleviating their sufferings. But it was not only by the ignorant and sick that his influence was acknowledged and blessed. Many an author, toiling arduously for his subsistence, or devoting every energy to win the world's coveted plaudits, would have sunk disheartened under countless failures or scathing criticism, but for words of kind encouragement or seasonable assistance of a pecuniary nature bestowed by Dr. Francis. Every case of suffering appealed to his sympathy, and no thought of self ever for a moment intruded if he knew that his presence would bring the least relief to the sick or soothe the dying pillow of the poorest outcast. He would leave alike his own bright fireside and the most brilliant entertainment to mingle in such scenes.

Although highly susceptible to the ludicrous, Dr. Francis was naturally of a thoughtful disposition, and this trait was much increased by the death of a talented son in 1855. To this son he had always looked as a co-laborer in his professional exertions, hoping through his assistance to be in a great measure relieved from the cares and responsibilities to which his popularity and large practice subjected him.

Though the loss of this son cast a gloom over the remaining years of his life, he was especially blessed in his surviving children, and we feel justified in saying that no household ever boasted a more attractive or affectionate domestic circle. Not specifying it by any means as an isolated case, we can particularly understand how delightful was the home of Dr. Francis, not only from the many charming qualities of its inmates, but also from its being the resort of many of the leading authors in American literature and men celebrated in every department of science. His social circle comprised such men as Daniel Webster, America's greatest orator; Washington Irving, whose graceful pen has brought the Alhambra so vividly before us; Leslie, the gifted pupil of West, and most successful of all Shakspeare's delineators; Fennimore Cooper, the immortalizer of aboriginal America; Philip Freneau, the revolutionary poet; Richard H. Dana, Jared Sparks, Robert Walsh, and others.

It was when surrounded by men such as these, whose tastes were so congenial to his own, that Dr. Francis was in his element; nor was the part he sustained in their midst in the least subordinate. The wondrous depths of his intellect, his personal reminiscences of celebrated men both at home and abroad, the many anecdotes with which his memory was stored, and the saliency and keenness of his remarks, won for him golden opinions from men whose friendship was an honor, and served to give him prominency among the literati.

Dr. Francis was a prolific writer on promiscuous as well as medical subjects, and an interesting summary of the events of his life may be found in his well-known "Old New York, or Reminiscences of the Past Sixty Years." He contributed largely to various newspapers and magazines, wrote for Rees's Cyclopedia when abroad, and will long be remembered for the clearness and excellence of his medical writings.

Among his latest literary productions was the contribution of the lives of Dr. Macneven and Dr. Mitchill, to the American Medical Biography, by the senior editor of this Review. The dedication of it to Dr. Francis, as a "representative physician of an age now rapidly passing away," has been, alas, but too prophetic!

In 1813 the chair of Materia Medica was conferred upon him by his Alma

Mater, and a short time afterward he succeeded Dr. Stringham as Professor of Medical Jurisprudence, retaining this position until the dissolution of the faculty and the foundation, by a portion of it, of Rutger's Medical College, which, after a successful career of four years, was closed by the legislature. In 1847 he was elected the first President of the New York Academy of Medicine after its organization; and he was a member of many scientific institutions both abroad and at home. In 1850 he received the degree of LL.D. from Trinity College at Hartford.

After his retirement from public life as a lecturer, Dr. Francis devoted himself to a meritorious discharge of the duties of his profession, and to the pursuit of art and science under their most agreeable phases. He was an ardent devotee at music's shrine, and the exquisite compositions of Mozart, Rossini, and Donizetti always exercised a magical influence over him, utterly incapacitating him at the time for the exertion of any other faculty than the rapt sense of hearing.

After his return from Europe, which he visited in 1814, the society of Dr. Francis was eagerly sought and appreciated by the intellectual social coteries which soon surrounded him. During his continental tour he was so fortunate as to meet with Abernethy and other eminent physicians, Sir Walter Scott, Burns, Kean, Tom Paine, Cuvier, Denon, Gall, Brewster, and many other men of similar renown.

Thanks to an excellent memory, he returned home with his mind well stored with interesting local and personal anecdotes and graphic accounts of contemporaneous history, whose recital was always a source of delight to his friends and admirers.

In bestowing upon him so many mental endowments, nature had not denied him the gift of physical attractions. We transcribe the following description from one of his numerous obituaries:—

> "Though seventy-two years old, he was to all appearance hale and hearty, until a very recent date. His genial face, his curling white hair, the low hat and white cravat which he usually wore, the heavy gold-headed cane almost invariably within his grasp when out of doors, all combined to give him the appearance of the now legendary Knickerbocker."

Dr. Francis was a regular attendant at Calvary Church, and a warm personal friend of its rector, Dr. Hawks, by whom he was visited in his illness.

He retained his consciousness to the last, and immediately before expiring spoke earnestly of his faith in an all-merciful God, and his entire submission to his inscrutable will.

> "Nothing in his life
> Became him like the leaving it. He died
> As one that had been studied in his death
> To throw away the dearest thing he ow'd
> As 'twere a careless trifle."

SIR HENRY MARSH.—This distinguished physician died suddenly of apoplexy, at his residence in Dublin, on the 1st of December, 1860, in the seventieth year of his age. At the age of twenty-two, he commenced the study of surgery under the late Sir Philip Crampton, and pursued it with him for five years, when the loss of a portion of his right index finger, from a dissection wound, obliged him to turn his attention to medicine. In 1818 he received his medical degree in the University of Dublin, and two years later was appointed Assistant Physician to Steevens's Hospital. He lectured on the Practice of Medicine, in the Park Street Medical School, of which he was one of the founders, until 1827, when he was called to fill the same chair in the Royal College of Surgeons of Ireland. This position he held for five years, when he relinquished it on account of his increasing private practice. In 1837, Dr. Marsh was appointed Physician in Ordinary to the Queen for Ireland, and in 1839 he was created a baronet. One year later he was chosen President of the King's and Queen's College of Physicians, an office which he filled at various times. During the same year he became Senior Physician to Steevens's Hospital, a post which he retained up to within two or three years of his death.

For the last thirty years, Dr. Marsh occupied the highest position among the medical practitioners of Dublin. His contributions to medical science are to be found principally in the *Dublin Hospital Reports*, and in the *Dublin Journal of Medical Science.* At the time of his death he was engaged in publishing a work, entitled "Observations on Transmitted Affections of the Stomach, and on Disturbances of the Brain, which give rise to Somnambulism, Ecstacism, etc.," a part of which is already printed.

DR. EDWARD RIGBY expired in London, on the twenty-seventh of December, in the fifty-sixth year of his age. The immediate cause of death was congestion of the lungs and suppression of the renal secretion; but he was also affected with cancer of the bladder, and for the last few days his sufferings were excruciating. In 1825, at the age of twenty-one, Dr. Rigby, although the medical profession was not his choice, took his degree of Doctor of Medicine, at the University of Edinburgh; and then went to Berlin, where he spent one year in studying midwifery. From this city he repaired to Heidelberg, and at the Lying-in Hospital made himself conversant with the mechanism of labor. On returning to England in 1829, he became house pupil at the Westminster Lying-in Hospital, and translated Nægelé's essay "On the Mechanism of Parturition." In 1831 he was appointed assistant lecturer on Midwifery, at St. Thomas's Hospital, and afterward succeeded Dr. Gooch as physician to the Lying-in Hospital, an appointment which he held until within two years of his death. In 1837 he was made lecturer on Midwifery at St. Bartholomew's Hospital, which he held fourteen years; and at the time of his death he was President of the Obstetrical Society of London.

Dr. Rigby was well known as a clear and forcible writer. In 1843 he published a second edition of Hunter's "Anatomical Description of the Human Gravid Uterus," and a year later a work entitled "On Dysmenorrhœa and other Uterine Affections in Connection with Derangement of the Assimilating Functions." In the same year appeared his "System of Midwifery," which for some time occupied the first position in England as a textbook on Midwifery; and in 1857 he published a work "On the Constitutional Treatment of Female Diseases."

DR. ANDREWS, Professor of Physiology in Queen's College, Birmingham, died of apoplexy, on the nineteenth of December.

Bi-Monthly Bibliographical Record.

AMERICAN.

Researches on the Venom of the Rattlesnake; with an Investigation of the Anatomy and Physiology of the Organs Concerned. By S. W. Mitchell, M.D., etc. 4to., pp. 145. Smithsonian Institution: Washington, 1861. (From the author.)

Proceedings of the Pathological Society of Philadelphia. Vol. i. 8vo., pp. 307. Philadelphia: J. B. Lippincott & Co., 1860. (From the secretary.)

Transactions of the American Medical Association. Vol. xiii. 8vo., pp. 930. Philadelphia, 1860. (From the secretary.)

A Practical Treatise on Phthisis Pulmonalis; embracing its Pathology, Causes, Symptoms, and Treatment. By L. McLawson, M.D., etc. 8vo., pp. 557. Cincinnati: Rickey, Mallory & Co., 1861. (From the publishers.)

A Catalogue of the Pathological Cabinet of the New York Hospital. By Robert Ray, Jr., M.D. 8vo., pp. 364. New York: S. S. & W. Wood, 1860. (From the hospital.)

The Institutes of Medicine. By Martyn Paine, M.D., etc. 6th edition. 8vo., pp. 1109. New York: Harper & Brothers, 1860. (From the author.)

Theory and Practice of the Movement Cure. By Charles Fayette Taylor, M.D. 12mo., pp. 295. Philadelphia: Lindsay & Blakiston, 1861. (From the publishers.)

Electro-Physiology and Electro-Therapeutics; showing the Best Methods for the Medical Uses of Electricity. By A. C. Garratt, M.D., etc. 2d edition. 8vo., pp. 716. Boston: Ticknor & Fields, 1861. (From the author.)

Diphtheria; its Nature and Treatment, with an Account of the History of its Prevalence in Various Countries. By D. D. Slade, M.D. 8vo., pp. 85. Philadelphia: Blanchard & Lea, 1861. (From the publishers.)

Report on the Importance and Economy of Sanitary Measures to Cities. By John Bell, M.D. 8vo., pp. 243. New York: Jones & Co., 1860. (From the author.)

Proceedings and Debates of the Fourth National Quarantine and Sanitary Convention, held in the City of Boston, June, 1860. 8vo., pp. 282. Boston, 1860. (From the secretary.)

To What Affections of the Lungs does Bronchitis give Origin? Prize essay. By D. D. Slade, M.D. 8vo., pp. 75. (From the author.)

On Uræmic Intoxication. By W. A. Hammond. M.D., etc. Reprint, pp. 31. Philadelphia, 1861. (From the author.)

Contributions to the Anatomy of the Spinal Cord. By J. B. Trask, M.D. 8vo., pp. 16. San Francisco, 1861. (From the author.)

Report of Stone's Infirmary, for the Year Ending August 31st, 1860. By T. G. Richardson, M.D. Reprint, pp. 24. New Orleans, 1861. (From the author.)

Report of the Kentucky Eastern Lunatic Asylum, for the Year 1860. Pamphlet, pp. 15. Frankfort, 1861. (From Dr. W. S. Chipley.)

Twenty-second Annual Report of the Central Ohio Lunatic Asylum, for the Year 1860. Pamphlet, pp. 28. Columbus, 1861. (From Dr. Hills.)

First Annual Report of the Superintendent of Clifton Hall, a Private Hospital for the Insane, for 1860. Pamphlet, pp. 8. Philadelphia, 1861. (From Dr. Given.)

A Case of Fracture of the Os Innominatum, and Death in Connection with the Administration of Sulphuric Ether. By W. H. Mussey, M.D. Reprint. pp. 8. Cincinnati, 1861. (From the author.)

FOREIGN.

On Diphtheria. By E. H. Greenhow, M.D. etc. 8vo., pp. 160. Baillière Brothers: New York, 1861. (From the publishers.)

A Hand-Book of Hospital Practice; or an Introduction to the Practical Study of Medicine at the Bedside. By R. H. Lyons, M.D., etc. 12mo., pp. 185. New York: S. S. & W. Wood, 1861. (From the publishers.)

Anatomy of the Arteries of the Human Body. Descriptive and Surgical, with the Descriptive Anatomy of the Heart. By J. H. Power, M.D., etc. 12mo., pp. 374. Dublin: Fannin & Co., 1860.

Conférences de Clinique Chirurgicale faites à L'Hotel-Dieu, pendant l'Année 1858–1859. Par M. A. C. Robert. 8vo., pp. 542. Paris: Germer Baillière, 1860.

The Science and Art of Surgery. By John E. Erichsen. 3d edition. 8vo., pp. 1167. London: Walton & Maberly, 1861.

Des Tumeurs du Corps Thyroide. Par C. Houel, M.D. 4to., pp. 99. Paris: Martinet, 1860.

The Principles and Practice of Surgery. By W. Pirrie, F.R.S.E. 8vo., pp. 878. 2d edition. London: John Churchill, 1860.

THE

NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

MAY, 1861.

Analytical and Critical Reviews.

Art. I.—*Cellular Pathology as based upon Physiological and Pathological Histology.* By Rudolf Virchow. Translated from the German, by Frank Chance, B.A., M.B. Illustrated by 144 Engravings on Wood. 8vo., pp. 511. London: Churchill, 1860.

The reviewer of a new book may be compared, in his pursuit after scientific truth, to the miner who wanders about in search of gold. No matter with what notions he may enter upon his journey, it is seldom that he realizes his expectations. However closely he may scan his author, or follow him in his train of thought and of study, he but too often finds that the pages before him are a mere transcript, perhaps not even always happily disguised in language and style, of what he had repeatedly read before. If he now and then lights upon a little precious ore, it is generally so surrounded by rubbish as to require no little effort to bring it fully into view. Disappointment, if not utter disgust, is too frequently the only recompense which he obtains for his toil. We need not inform the reader that these remarks are not in anywise applicable to the treatise of Rudolf Virchow. Original in its design, and eminently so in its execution, it everywhere abounds in new facts, in plausible deductions, and in valuable suggestions, which stamp it as a great production.

The name of Virchow is not unknown to our readers. The pages of the Review have, on numerous occasions, borne evidence of the fruits of his vigorous intellect and of his varied and profound researches. Less than fifty years of age, he is one of the most indefatigable cultivators of medical science in the Old World, where he has established a reputation as brilliant as it is extensive and honorable. A native of Prussia, he rendered himself, early in life, on account of his radicalism in politics, offensive to his government; a feeling which was still further increased by his report on typhus and cretinism in Silesia, and which was probably the reason which induced him to quit Berlin and settle at Würzburg. In the latter city, so renowned for its university and its galaxy of distinguished men in the various branches of the arts and sciences, he was soon made a professor, and thus became associated with Scherer, Kölliker, and other medical luminaries, thirsting not less ardently than himself after knowledge and reputation. While here, zealously and laboriously occupied with the duties of his chair, he founded, in 1847, along with Remhardt, the Archives of Pathological Anatomy, and contributed numerous papers, all of them of a highly original cast, to the Würzburg Transactions. Many of these papers were speedily translated into foreign languages, and, together with most of his earlier pieces, were finally embodied in his "Collected Essays," published a few years ago in two stately octavo volumes, comprising his admirable researches on embolia, of which an account appeared in the May number of this Journal for 1858. He also projected, during his residence at Würzburg, the Cyclopædia of the Medical Sciences, he himself taking the department of pathology and therapeutics, upon which he has, however, published only the first volume.

A few years ago, a better feeling prevailing toward him on the part of the Prussian government, Virchow was recalled to Berlin, in the university of which he now occupies the chair of pathological anatomy, general pathology, and therapeutics. He is also Director of the Pathological Institute—an establishment which is indebted for its existence and reputation mainly to his influence—and physician to the Charité Hospital, one of the largest and best regulated receptacles of the kind in Germany. Of the vast industry of Professor Virchow, an idea may be formed when it is stated that he delivers not only full courses of lectures on the several branches of medicine confided to his care in the university, but that he passes daily eight or nine hours at the Charité, in prescribing for his cases and examining dead bodies, that he is constantly engaged upon new researches and the publication of important papers in his Archives of Pathological Anatomy, of which he still continues to be the editor, and that he makes it a business to read all the more important French, German, and English medical works as they are issued from the press. The translator of the Cellular Pathology states, in referring to this subject, as an additional proof of Virchow's industry, that he received from him, during the preparation of the English edition, at least fifty letters, most of them very long ones, explanatory of the text, and generally written within the first twenty-four hours after the requisition of Dr. Chance fell into his hands. With such an astonishing capacity for labor, and such an honesty of purpose to discharge well and truly all the various duties confided to him, it is not surprising that Rudolf Virchow should enjoy the very first rank among the medical philosophers of his own country, and that he should have achieved a most enviable reputation among foreign nations. It is said that his private practice is very restricted, and this we can readily believe, since his public avocations must of necessity absorb nearly all his time.

The present is the second edition of the Cellular Pathology, the first having appeared in 1858. Mr. Chance, the translator, has performed his task with great care and the strongest desire to interpret correctly the meaning of the distinguished author. His style, however, is, in consequence, occasionally too idiomatic, and devoid of that elegance so befitting a work destined to be so generally read. The wood-cuts are well executed, and greatly assist in the comprehension of the text. A French translation of the work was published at Paris in 1860.

The treatise before us is founded upon the course of lectures, twenty in number, delivered by Virchow in the Pathological Institute of the University of Berlin in the early part of 1858. The auditors were numerous, and consisted principally of medical men, for the most part practitioners of the city. The subjoined paragraph explains the motive which induced the author to prepare them.

> "The object chiefly aimed at in them, illustrated as they were by as extensive a series of microscopical preparations as it was in my power to supply, was to furnish a clear and connected explanation of those facts upon which, according to my ideas, the theory of life must now be based, and out of which also the science of pathology has now to be constructed. They were more particularly intended as an attempt to offer, in a better arranged form than had hitherto been done, a view of the cellular nature of all vital processes, both physiological and pathological, animal and vegetable, so as distinctly to set forth what even the people have long been dimly conscious of, namely, the unity of life in all organized beings, in opposition to the one-sided humoral and neuristical (solidistic) tendencies which have been transmitted from the mythical days of antiquity to our own times, and at the same time to contrast with the equally one-sided interpretations of a grossly mechanical and chemical bias—the more delicate mechanism and chemistry of the cell."

In the Cellular Pathology, Virchow, as expressly avowed in the preface to the first edition of the work, assumes the attitude, not of a revolutionist, but of a reformer; he would preserve the old, and add the new. His desire is to combat false doctrine, and aid in clearing away the rubbish which incumbers the science and mars the fair proportions of the great temple of medicine. Conscious of having labored hard and zealously for the advancement of pathology, histology, and therapeutics, he feels that he is entitled to a fair hearing on the part of the public, and he therefore places with modesty, yet as one aware of his strength, the results of his researches and deductions into the hands of his professional brethren, asking them to give them a rigorous and impartial examination, rejecting what is false and embracing what is true. We are disposed, at the outset, to accord to Virchow the highest meed of praise as an original and discriminating observer; his work displays everywhere the traces of a philosophical mind, and an ardent desire to unravel truth and to extend the boundaries of our knowledge. In studying its pages one feels almost inclined to conclude that the gifted author has been sent on a prophet's errand to inaugurate a new era in medical science. His treatise has much in common with that of Paget, and it might, perhaps, be regarded as filling the same gap in medicine that that work does in surgery. The Cellular Pathology, however, is in advance of the production of the English author, and it bears a still stronger impress of originality, laying, as it certainly attempts to do, the foundation of a new pathology and therapeutics.

The cell-doctrine is of recent origin. Not many years ago, Schleiden, whose name is so intimately associated with the science of botany, enunciated the important fact that the ulterior structure of all vegetables consists of minute cells, closely aggregated together, more or less complex in their arrangement, and enjoying each a sort of independent life or separate individuality. Schwann, following closely in the footsteps of his countryman, confirmed the truth of these researches, and ere long a host of observers arose who contended for the existence of similar cells in animal bodies. According to this doctrine, which is now attracting so much attention, the cell is the ultimate morphological element of our tissues, the ultimate link in every structural chain in which there is any vital manifestation. Although intimately connected with other cells, it is, nevertheless, independent of its neighbor; it has its own life, its own territory, its own government, and it is by the conglomeration of such bodies that the various tissues and organs are formed. No growth or development can take place without a cell; a cell may perish, but its death does not necessarily involve the destruction of any other cell. As Harvey contended that everything originated from the egg, so, according to Virchow, everything has its rise in a cell.

> "Where a cell arises, there a cell must have previously existed; *omnis cellula é cellulâ*, just as an animal can spring only from an animal, a plant only from a plant. In this manner, although there are still a few spots in the body where absolute demonstration has not yet been afforded, the principle is, nevertheless, established that, in the whole series of living things, whether they be entire plants or animal organisms, or essential constituents of the same, an eternal law of *continuous development* prevails."

Setting out with this idea of the existence of a cell and the possibility of its indefinite extension, or continuous proliferation, as he terms it, the author arranges the normal tissues into three categories, according to the natural disposition of the cells, or their relation with each other and the neighboring structures.

In the first group are included those tissues which consist exclusively of cells, the cells lying closely together, and thus composing what, in the modern sense of the term, forms the cellular texture. The second category comprises the tissues in which the cells are separated from each other by a certain amount of intermediate matter, technically called *intercellular*, which, however, at the same time serves to bind them together. To this division appertain what modern anatomists denominate the connective tissue, or what was formerly known as the cellular tissue. In the third class are embraced the nervous and muscular systems, the vessels, and the blood, those higher types of cell-forms and tissues which belong exclusively to the animal economy, although a few of them exhibit a transition to vegetable forms. This classification, of course, totally rejects the theories of elementary fibres and globules, formerly so much insisted upon by anatomists and physiologists, or, what is the same thing, it seeks to reduce the tissues to their primordial principles. The modern histologist thus speaks of elementary cells and tissues in the same manner as the chemist speaks of elementary bodies, only that the classification of the one is very simple, whereas that of the other is extremely complex.

Virchow lays great stress upon what he terms *cell-territories*, assigning to them important nutritive functions. He asserts that in those structures which are destitute of vessels distinct canals exist, whose business it is to distribute the nutritive juices through the intercellular substance, thus imparting to each atom of living matter its due share of nourishment. In speaking of the minute anatomy of tendon, the following remarks occur:

> "You have here a fresh instance in support of my view in regard to cell-territories. I would parcel out the whole tendon, not into primary and secondary fasciculi, but rather into certain series of cells, connected in a retiform manner; to such series, moreover, I would assign a certain district of tissue, so that in a longitudinal section, for example, about half of each band of basis-substance would belong to one, the other half to another series of cells. What is, therefore, regarded as constituting the proper fasciculi of the tendon, would, according to this view, have really to be split up, and the tendon portioned out into a great number of nutritive districts."

This reticular arrangement is nowhere more clearly demonstrable than in the section of a tendon, and Virchow, therefore, regards this structure as a model type of cell-territories. It influences the extent of the districts invaded by disease; for "every disease which depends upon a disturbance of the internal disposition of the tissues, is always made up of the sum of the separate changes occurring in such territories."

Every cell in the body, whatever may be its character, form, situation, or structure, from the most humble to the most exalted, from the most simple to the most complex, possesses the power of attracting matters from the passing current of blood, whether in close contact with, or more or less remote from, it, of effecting within its cavity certain changes in these materials, and of returning these materials, thus transmuted or altered, to the circulation, appropriating them to its own nourishment and support, or throwing them off in the form of recrementitious or excrementitious substances.

The germ of the whole cellular pathology of Virchow seems to be comprised in the following paragraph. After having spoken of the functions and elective affinities of some of the higher cells, as those of the liver and kidney, he remarks:—

> "Now I demand for cellular pathology nothing more than that this view, which must be admitted to be true in the case of the large secreting organs, be extended also to the smaller organs and smaller elements; and that, for example, an epidermis-cell, a lens-fibre or a cartilage-cell be, to a certain extent, admitted to possess the power of deriving from the vessels nearest to them, (not always indeed directly, but often by transmission from a distance,) in accordance with their several, special requirements, certain quantities of material; and again that, after they have taken this material up, they be held to be capable of subjecting it to further changes within themselves, and this in such a manner that they either derive therefrom new matter for their own development; or that the substances accumulate in their interior, without their reaping any immediate benefit from it; or finally that, after this imbibition of material, even decay may arise in their structure and their dissolution ensue. At all events, it seems necessary to me that great prominence should be assigned to this *specific action of the elements of tissues*, in opposition to the specific action of the vessels, and that in studying local processes we should principally devote ourselves to the investigation of processes of this nature."

Virchow is a warm advocate of the local origin of the *dyscrasiæ*, denying that they ever have their real seat in the blood. He totally dissents from the idea of the humoral pathologist, so prejudicial in its clinical bearings, that any change in the composition of the blood may be propagated *in this fluid itself*, and remain there as a permanent or persistent thing; not but that he believes that such a change may pertinaciously continue, or that it may be even transmitted from generation to generation. On the contrary, he regards the blood as a temporary tissue, constantly dependent upon other parts, and incapable of regenerating and propagating itself out of itself. To satisfy ourselves upon this point, it is only necessary to apply the same conclusions, which are universally admitted to be true, respecting the dependence of the blood upon the absorption of new nutritive matter from the alimentary canal to the various tissues themselves. Virchow, in further illustration of this subject, shall speak for himself:—

> "When the drunkard's dyscrasia is spoken of, nobody of course imagines that every one who has once been drunk labors under a permanent alcoholic dyscrasia, but the common opinion is, that, when continually fresh quantities of alcohol are ingested, continually fresh changes also declare themselves in the blood, so that its altered state must continue as long as the supply of fresh noxious matters takes place, or as, in consequence of a previous supply, individual organs remain in a diseased condition. If no more alcohol be ingested, if the organs which had been injured by the previous indulgence in it be restored to their normal condition, there is no doubt but that the dyscrasia will therewith terminate. This example, applied to the history of all the remaining dyscrasiæ, elucidates in a very simple manner the proposition, that *every dyscrasia is dependent upon a permanent supply of noxious ingredients from certain sources.* As a continual ingestion of injurious articles of food is capable of producing a permanently faulty composition of the blood, in like manner persistent disease in a definite organ is able to furnish the blood with a continual supply of morbid materials."

The essential point, therefore, practically considered, the author continues, is to search for the local origin of the different dyscrasiæ, or to determine what organs and tissues are concerned in producing this derangement in the constitution of the blood, a task by no means always easy or successful.

The name of Virchow, as is known to the reader, is intimately associated with *leukæmia*, and it is, therefore, not surprising that the subject should have received a certain share of attention in these lectures.

Leukæmia, signifying white blood, consists essentially in an increase of the number of white globules, in consequence, generally, of a diseased condition of the spleen, or of this organ and of the lymphatic glands. In the healthy state the number of white corpuscles is comparatively small, there being, on an average, not more than one to about three hundred red ones; but in the affection under consideration the relative proportion is greatly augmented, being frequently as one to five, four, or even three. Indeed, in some of the worst cases that have been observed, the two kinds of globules existed nearly in equal numbers, thereby imparting to the whole blood, or, more properly speaking, to certain portions of it, as the clots found in the right cavities of the heart after death, a singularly white appearance, as if the fluid were intermixed with puriform particles. It was, no doubt, owing to this peculiar condition of the blood, that pathologists were so long kept in ignorance respecting the true nature of this disease, the colorless globules of the blood having, until a comparatively recent period, been mistaken for pus corpuscles. Its discovery seems to have been effected almost simultaneously by Virchow and

J. Hughes Bennett, of Edinburgh, the latter of whom has described it under the more appropriate name of leucocythemia, literally signifying white cell blood, a term universally adopted in England, France, and America. Dr. Bennett, in his claim to priority, to which, however, no allusion is made by the German author, has conclusively proved that his first case of leucocythemia was observed in March, 1845, and an account of it published in the following October, whereas Virchow's case did not occur until August of the same year; nor did he give publicity to it until the ensuing November.

When leucocythemia exists in its worst form, the blood, as it flows from a vein in the arm in venesection, occasionally exhibits whitish streaks, strongly denotive of the nature of the disease. Again, if blood thus taken be deprived of its fibrin by stirring, and allowed to stand, a voluntary separation speedily occurs, the two kinds of corpuscles sinking to the bottom of the receiver, where they form a double sediment, the lower stratum being red, the upper white, or of a puriform aspect. This occurrence is readily explained by the differences in the specific gravity of the two kinds of blood corpuscles, the red being much the heavier, and so reaching the bottom of the vessel sooner than the white.

Nearly all the reported cases of this disease have terminated fatally; one only is said to have been benefited by treatment, and that merely in a slight degree. Whether death is caused directly by this condition of the blood, or by the lesions which give rise to this wonderful increase of white globules, is still a mooted question. As the disease proceeds toward its close, a genuine hemorrhagic diathesis is often established, causing blood to issue from the nose and other mucous outlets, and giving rise to apoplectic effusions into the brain. The quantity of fibrin in leucocythemia may be normal, increased or diminished.

Virchow speaks of two varieties of this disease, the splenic and the lymphatic; but for such a distinction there is no just foundation, inasmuch as it is not always induced by enlargement of the spleen and lymphatic ganglions, but may be caused also by disease of the liver, thyroid gland, kidneys, supra-renal capsules, stomach and intestines, although in most instances the former structures are most seriously, if not exclusively implicated; and this circumstance would seem to lead to the inference that these structures exert a direct and positive influence upon the production of the white globules, which often exist in such abundance, and which impart to the malady its characteristic features.

Pyæmia claims attention in Lecture IX. Notwithstanding the labors bestowed upon it by different observers, the author thinks it "must still be reckoned among the most controvertible of subjects." One great, if not the principal, reason of this is, that, until recently, observers constantly mistook the white globules of the blood, often greatly increased in number in this disease, for pus corpuscles. The error thus committed naturally led to the supposition that the constituents of pus pre-existed in the blood, that it might be secreted by this fluid, and that it could also, like a simple liquid, find its way into the vessels, or, in other words, that pus, as such, could be reabsorbed. All these doctrines, at one time so prevalent and so specious, have become obsolete. *Pus, as pus, is never reabsorbed.* It is only the more attenuated portions of pus that can be thus disposed of, or find their way into the circulation. The mass of solid constituents, left behind when this process has been going on, is a *caput mortuum*, a mass destitute of vitality, containing the pus corpuscles in a shriveled condition, incapable of being further influenced by the absorbent vessels. It constitutes the concrete pus of the French, and the cheesy, inspissated product of other writers. Such pus material, which is by no means uncommon, may play an important part in the economy, ultimately undergoing softening, and so causing inflammation and ulceration, as secondary consequences. It is only in very rare cases that the broken-down matter is reabsorbed. When this concrete substance exists in the lungs, it may simulate certain forms of tubercle, from which, however, as will be shown further on, it completely differs. Healthy pus, as has long been known, is a very compound fluid, comprising a prodigious number of distinctive globules, of an essentially cellular nature. The following extract gives the author's views upon the subject:—

> "Pus consists essentially of cells, which in their ordinary condition lie close to one another, and between which a small quantity of intercellular fluid (*pus serum*) exists. Within the pus corpuscles themselves lies a substance which is likewise provided with a great quantity of water; for nearly every specimen of pus, although it may look very thick when fresh, contains such a large amount of water that it loses a great deal more by evaporation than a corresponding quantity of blood. The latter only gives the impression of being more watery because it contains a great deal of free, (intercellular,) but relatively little intra-cellular, fluid, while in pus, on the contrary, there is a greater quantity of water in the cells, and less without them. When, then, reabsorption takes place, the greatest part of the intercellular fluid first disappears, and the pus corpuscles draw nearer to one another; soon, however, a part of the fluid from the cells themselves also vanishes, and in proportion as this is the case, they become smaller, more irregular, angular, and uneven, they assume the most singular forms, lie closely pressed together, refract the light more strongly on account of their containing a greater quantity of solid matter, and present a more homogeneous appearance."

Although, in general, only the fluid portions of pus are reabsorbed, there are cases, and these are the more favorable, where all the constituents of the mass, fluid as well as solid, find their way into the circulation; but, in order that such an event may take place, the pus must previously undergo a fatty metamorphosis, its cells being broken down, and replaced by an emulsive mass, a kind of milk, composed of water, albumen, fat, and salts:—

> "These are the processes which may be denominated 'physiological reabsorption of pus;' a reabsorption, in which pus is not reabsorbed as such, but either only its fluid constituents, or its solid ones after they have been considerably altered by an internal transformation."

There is, however, one condition in which pus may find its way directly into the current of the circulation, as in the case of a wound, rendering a vessel more or less patulous. But this is not, properly speaking, a reabsorption, but an intravasation, as Virchow designates it. The same thing may happen where an abscess, lying close to a vein, and bursting through its walls, discharges its contents into its interior. Finally, another mode of transmission or of ingress is by means of the lymphatics running into a collection of matter. This mode of access, however, must be very uncommon, and it remains to be proved whether pus, as such, can really find its way at all into the blood through these channels, inasmuch as there is a strong probability that its corpuscles are always arrested in their onward course by the lymphatic ganglions. As a proof of the truth of this remark, Virchow refers to what happens in the process of tattooing, in which the skin, after having been pricked at numerous points by a needle, is rubbed over with a substance which is insoluble in the fluids of the body, as cinnabar or gunpowder, so as to leave a permanent stain. Of this substance some necessarily gets into the lymphatic vessels, and it has been ascertained that the larger particles of it, the size of which is less than that even of the smallest pus corpuscle, are always intercepted by the lymphatic ganglions, none of them passing into the internal organs. "Now when such molecules as these are unable to pass, when such extremely minute particles cause an obstruction, it would be somewhat bold to imagine that pus corpuscles, which are relatively large, could effect a passage." The lymphatic ganglions, however, are not to be considered as mere filters interposed between the different portions of the lymphatic vessels; on the contrary, it is highly probable that the fluids which are retained in them undergo some chemical change, whereby they are deprived, in great measure, of their noxious properties, so as to render them, upon their arrival in the blood, comparatively inoffensive.

We have not time to follow Virchow in all he says upon this subject. The subjoined paragraph comprises the summing up of his conclusions respecting it.

> "Upon examining these different pathological processes in this manner one by one, it is really impossible to discover anything at all, which, in a morpho-

logical point of view, could even in a remote degree justify the assumption of a condition such as might be called pyæmia. In the extremly rare cases, in which pus breaks through into veins, purulent ingredients may, without doubt, be conveyed into the blood, but in such instances the introduction of pus occurs for the most part but once. The abscess empties itself, and if it be large, an extravasation of blood is more apt to ensue than the establishment of a persistent pyæmia. Perhaps we shall at some future time succeed, in the course of such a process, in discovering pus corpuscles with well-defined characters in the blood; at present, however, the matter stands thus, that it can most positively be maintained that nobody has hitherto succeeded in demonstrating, by arguments capable of supporting even gentle criticism, the existence of a morphological pyæmia. This name therefore must, as designating a definite change in the blood, be entirely abandoned."

It seems to us that the view taken of this question by Virchow is anything but philosophical. The word pyæmia signifies blood poisoning, but it does not follow when such poisoning takes place that pus, as such, should enter the circulation, especially not that we should be able to detect the presence of pus corpuscles in the blood during life or after death. Pus is often a very irritating fluid, and that it may contain poisonous matter is a fact familiar to every one. The virus of chancre and that of small-pox are in point. They both enter the circulation, and make an impression upon the system capable of enduring a long lifetime. It has already been seen that the more attenuated portions of pus may easily find their way into the system. Why may they not, then, become a source of contamination to the blood, altering its properties, rapidly impairing the vital powers, and leading to the formation of metastatic abscesses in various organs and tissues? To produce such a result it is not at all necessary that pus corpuscles should enter the circulation, much less that pus, as pus, should be reabsorbed. All the mischief may be done by the fluid constituents of the pus, and if we assume the possibility of such an occurrence, which even Virchow himself does not deny, for he distinctly recognizes it in another portion of the work under the appellation of ichorrhæmia, there is no valid reason, indeed no reason at all, why we should discard the word pyæmia, more especially as universal usage has sanctioned its employment.

The subject of *embolia* occupies a conspicuous place in the volume before us, being fully discussed in Lecture X. If Virchow's claims to priority as the discoverer of leukæmia may justly be disputed by Dr. Bennett, no such doubtful question meets us here. To the German alone belongs the field, and it is needless to say that it forms the basis of much of the reputation which he has so justly earned as a patient and careful observer. The subject, it is true, as will appear by a reference to the learned paper in the Review previously alluded to, had been incidently mentioned by other pathologists; cases had occasionally been published as exemplifications of the possibility of such an occurrence; but it remained for Virchow to study the entire question in its various bearings and relations, and to bring it for the first time prominently before the profession. The very name which he applied to it was until then unknown in science. His first paper was exhaustive, proving how powerfully he had applied himself to the investigation of the subject.

The formation of embolia is discussed along with other topics, as pyæmia and phlebitis, with which it is intimately associated. Cruveilhier and his school regarded the formation of clots in the veins as inseparably connected with inflammation. Virchow, without denying that inflammation may exercise such an influence, asserts that there may, on the one hand, be phlebitis independently of coagula, and, on the other, coagula without phlebitis. Restricting himself, therefore, to the consideration of the naked facts of the formation of clots, he proposes to comprehend the whole of the process under the name of *thrombus*, using it as a substitute for the different terms phlebitis, arteritis, and others of a like import, inasmuch as, to use his own expression, the affection essentially consists in an actual coagulation of the blood at a *certain fixed spot.*

> "Upon investigating the history of these thrombi," says Virchow, "we find that the puriform mass which is met with in their interior does not originate in the wall, but is produced by a direct transformation of the central layers of the clots themselves, a transformation indeed which is of a chemical nature, and during which, with a result similar to that which can be artificially obtained by the slow digestion of coagulated fibrin, the fibrin breaks up into a finely granular substance and the whole mass becomes converted into *débris.* This is a kind of softening and retrograde metamorphosis of the organic substance, in the course of which from the very commencement a number of extremely minute particles become visible; the large threads of fibrin crumble into pieces, these again into smaller ones, and so on until after a certain time has elapsed the chief part of the mass is found to be composed of small, fine, pale granules. In cases in which the fibrin is comparatively very pure, we frequently see scarcely anything else than these granules."

There is, then, no pus, no purulent matter, but merely a puriform substance in these thrombi, the result of their disintegration. In addition to the granules above described, there are specimens which frequently contain other structures, especially cellular elements, of a rounded or angular shape, closely heaped together, and presenting one, two, or more nuclei, the whole bearing a very remarkable resemblance to pus corpuscles. Upon carefully following up the different stages of the process in the formation of thrombi, Virchow has been able to satisfy himself that these corpuscles are not adventitious, but that "they pre-exist, and that they do not arise within the clot, and are not forced into it. Even when quite recent thrombi are examined, the corpuscles are found in many places heaped up in great masses, so that when the fibrin breaks up, they are set free in such numbers that the débris are nearly as rich in cells as pus. It is with this process just as when water, which is thoroughly impregnated with solid particles, is frozen and then exposed to a higher temperature; when the ice melts, the inclosed particles must of course again come to light."

In all these processes there is, then, in the true sense of the term, no suppurative phlebitis, or, indeed, any phlebitis whatever, but merely a coagulation of blood, a clot, or thrombus, which finally breaks down and becomes disentegrated. How this thrombus is formed Virchow fails to inform us. He does not deny that phlebitis may not occur; but in this event the inflammation affects, he says, the walls of the veins, and not their contents, causing the former to become opaque and thickened by interstitial deposits, and sometimes even exciting suppuration or the formation of abscesses. He, however, admits that phlebitis may at times occasion thrombus, and in like manner arteritis and endocarditis, as when the inner surface of the lining membrane of the heart and vessels is marked by inequalities, elevations, depressions, and even ulcerations, thereby entangling the blood, and so favoring coagulation. "Still," he adds, "wherever phlebitis, in the usual sense of the word, takes place, the alteration in the coat of the vessel is almost always a secondary one, and indeed occurs at a comparatively late period."

Now if Virchow thinks that the blood ever coagulates in a vein, in an artery, or in the heart, as a physiological act, we entirely disagree with him; for we have never in all our dissections witnessed a result so utterly at variance with the healthy circulation. We regard the thing as simply impossible. The only way in which we can account for the formation of clots or thrombi, during life, is to suppose that they are the result of a local, circumscribed, or diffused inflammation, forming so many points, roughened with plastic material, to which the fibrin of the blood, as it sweeps along, becomes attached, and so conduces to coagulation or the development of thrombi. We know of no other theory adequate to explain the occurrence.

The manner in which these clot-formations are broken down and ultimately removed is thus described by the author.

> "The process runs its course in such a way that the most recent parts of the thrombus always consist of the blood which has most lately coagulated. The softening, the partial liquefaction, generally commences in the centre, in the oldest layers, so that, when the thrombus has attained a certain size, there exists in the midst of it a cavity of larger or smaller dimensions, which gradually enlarges

and keeps approaching more and more closely to the wall of the vessel. But in general this cavity is shut off in an upward and downward direction by means of a more recent and tougher portion of the clot which, after the manner of a cap, takes care that, as Cruveilhier expresses himself, the 'pus' remains sequestered, and all contact between the *débris* and the circulating blood is prevented. Only sideways does the softening extend until it at last reaches the wall of the vessel itself; this becomes altered, it begins to grow thicker and at the same time cloudy, and ultimately even suppuration takes place within the walls."

There are two ways in which these clots may produce serious secondary effects; by the admixture, namely, of the dissolved matter with the blood, and by the detachment from the softened thrombus of various sized fragments which are afterward propelled along with the blood and forced into remote vessels, acting thus obstructingly, if not fatally, to part and even to system. Thus, in the brain they may cause apoplexy, in the heart an arrest of the circulation, in the lungs asphyxia; while in the smaller vessels they may provoke inflammation, dropsy, atrophy, dry gangrene, and other lesions. These disintegrated and softened masses, so pernicious in their tendency, constitute, it may now be observed, the so-called embolia of Virchow. Their study deserves the careful consideration of every pathologist and practitioner.

There is a condition of the blood to which the term *melanæmia* has been applied, in reference to the colored elements which are sometimes met with in this fluid. The affection, which appears to be intimately allied to leukæmia, has attracted the notice of various observers, as Stiebel, Meckel, Frerichs, and Tigri, who have all published cases illustrative of its character. Virchow himself has seen only one instance of it, and he therefore acknowledges his inability to throw any material light upon its nature, or to determine what influence, if any, it exerts upon the state of the blood, especially as to its contaminating power. Their development would seem to be in some way connected with enlargement or disease of the spleen, as in all of the reported cases of the affection this organ was found to be very unhealthy.

Melanic blood corpuscles occasionally occur in large quantities. They exist very sparingly in healthy individuals, although Schultz, who has devoted much attention to their study, declares that they are always present in considerable numbers. They have thus far been met with in greatest abundance in intermittent and typhoid fever, in cyanosis after cardiac disease, in epidemic affections, and in blood poisoning consequent upon severe accidents and operations. Virchow agrees with Schultz that these changes in the color of the blood corpuscles are due to a species of decay, a kind of *moulting* of the blood, or preparation for the really excrementitious transformations.

A large space is devoted to the discussion of the *fatty degeneration;* but, although the subject is replete with interest, especially when treated by a man of the vast scientific knowledge and skill of Virchow, there are so many other points to be examined that we shall content ourselves with a few brief extracts.

> "We have now compared a series of examples of fatty degeneration, and may henceforth confine ourselves to the consideration of genuine *fatty metamorphosis,* in which the normal structure of the part is ultimately destroyed, and the place of the histological elements is gradually occupied by a purely emulsive mass, or, more concisely, *fatty débris.* It makes no difference whether it is a pus cell, a connective tissue corpuscle, a nerve or muscular fibre, or a vessel which experiences the change; the result is always the same; namely, milky débris, an amorphous accumulation of fatty particles in a more or less highly albuminous fluid. But though we hold to the agreement of all cases of fatty metamorphosis in this respect, it by no means however follows, that the importance of this change as a morbid process is in every case the same. This you may at once infer from the circumstance that, while I have introduced this process to your notice in the category of purely passive disturbances, one of the very structures which we most frequently find in it, the granule globule, has been regarded as a specific element of inflammation. For years an inflammatory globule [exudation corpuscle] was looked upon as an essential phenomenon in the process of inflammation, and in fact the frequency with which cells in a state of fatty degeneration are found in inflamed parts affords sufficient proof that, in the course of inflammatory processes, which it is impossible we should ever regard as simply passive processes, such transformations must take place."

To the above remarks, it is proper to add that the author considers the early stages of fatty degeneration to be nearly always preceded by a *cloudy swelling,* as he terms it, occasioned by the deposition of a large quantity of matter by which the parts are increased in extent and density. He does not admit that these phenomena are due to the superaddition of exudation proceeding from the vessels, for similar changes, he says, occur in parts where no vessels exist. It is only when the accumulation has attained such dimensions as to endanger the natural constitution of the elements that a fatty disintegration is set up in their interior. Moreover, he declares that, although there is, using the expression in a general sense, an inflammatory form of fatty degeneration, yet, strictly speaking, this form is only a late stage of the process, a kind of termination, announcing the commencement of the disintegration of the tissue, when the part deprived of the power of maintaining a separate existence is abandoned in some degree to the play of chemical affinities, or, in other terms, when it is almost ready to perish. When the essential elements of a tissue have been thus changed there cannot afterward be any restoration of its normal structure. Hence this form of fatty degeneration is of great practical consequence. The following remarks are worthy of attention.

"When inflammation takes place in a muscle and in its course the primitive muscular fasciculi fall into a state of fatty degeneration, as a rule they also perish, and we afterward find a loss of substance in the muscle at the spot where the degeneration took place. The kidney, whose epithelium has passed into a state of fatty degeneration, nearly always shrivels up, and the result is a permanent atrophy. In exceptional cases something perhaps occurs, which reminds us of a regeneration of the epithelium, but usually a collapse of the entire structure ensues. The same thing is witnessed in the brain in yellow softening, no matter how it may have been caused. Whether there have been inflammation or not, a vacuity is formed, which is never again filled up with nervous matter. Perhaps a simple fluid may replace the wanting tissues, but as to any reproduction of a new, functionally active part, that must ever be out of the question."

The *amyloid degeneration* is discussed in Lecture XVII. Until described by Virchow, about ten years ago, its true nature was concealed under what used to be known as the lardaceous or waxy alterations. Indeed, up to this period, it had also not unfrequently been taken for a peculiar fatty matter, albumen, fibrin, or colloid. The rudiments of the discovery were furnished by the application of iodine to the nervous centres, the reaction of which disclosed the existence of the so-called "corpora amylacea." Soon afterward it was detected by Virchow and Meckel in other organs, so that there are, at the present moment, hardly any structures in which it has not been observed. Thus, it has been found in the heart, liver, spleen, kidneys, uterus, the lymphatic ganglions, the minute branches of the arteries, the interior of cartilages, the whole alimentary track, in the mucous membrane of the urinary apparatus, and in the prostate gland.

The amyloid matter presents itself in two forms—as a free substance adherent to the outside of the tissues, or lying, as the author expresses it, between their elements, and as an infiltration of the tissues, in which all their constituents, parenchymatous and interstitial, are filled with it. In the former variety, the matter consists of bodies which, in their chemical properties, are more analogous to real vegetable starch; their form, too, bears a remarkable resemblance to vegetable starch granules, being more or less round, or oval, and arranged in a succession of concentric layers. Their volume is sometimes very large, and they are always particularly distinct in the "corpora amylacea" of the nervous system, in the prostate gland of old people, and in certain conditions of the lungs. Occasionally a number of these bodies are piled together, and then they may assume a "gigantic" size, having perhaps a diameter of two lines, so that they can easily be separated from the tissues in which they are imbedded, and examined with the naked eye. Under the action of iodine, they exhibit, like vegetable starch, a blue color, or a green color, if they are mixed up with much albuminous or nitrogenous matter.

In the other variety of amyloid degeneration, the mode of infiltration bears a very close resemblance to that of lime in calcification of the arteries; and the change differs still further from the preceding, in the fact that the new substance never becomes blue under the influence of iodine alone, at least no case of the kind has yet been observed. On the contrary, the contact of the fluid produces a peculiar yellowish-red color, and a perfectly blue or violet color only when the application of iodine is followed by the cautious addition of sulphuric acid.

The source of the amyloid substance is not determined. Virchow has sought for it in the blood, but in vain. However this may be, the affection to which it gives rise already occupies a high position among pathological processes. It has been shown that organs which are its seat are eventually entirely deprived of their functions; the glands, for example, being incapable of secreting their appropriate fluids, and the vessels of carrying nutritive matter to the tissues through which they are distributed. In the bowels, this metamorphosis induces diarrhœa; in the kidneys, dropsy and other symptoms of Bright's disease; in the liver, an arrest of the biliary secretion. In the advanced stages of the disease, the patient falls into a state of excessive marasmus, and finally dies exhausted, in many cases from sheer starvation.

In treating of *inflammation*, Virchow lays down his peculiar notions respecting the intimate nature of this process; and so important do we deem these views, that we shall endeavor to give a brief abstract of them for the benefit of the reader. It will be perceived that they are altogether of a revolutionary character.

Virchow sets out with the assertion that inflammation is not a real entity, or a process everywhere identical in its character, as has been so often supposed, but a process essentially similar to other morbid actions, differing, in fact, from them only in its form and course. He believes that irritation must be taken as the starting-point in the consideration of inflammation, for it is impossible to conceive of such an occurrence without the application of some hurtful stimulus. The principal sources of this irritation are three—the functional, nutritive, and formative—the first playing, as he imagines, the least important part in the process:—

"If, therefore, we speak of an inflammatory stimulus, we cannot properly intend to attach any other meaning to it than that, in consequence of some cause or other external to the part which falls into a state of irritation, and acting upon it either directly or through the medium of the blood, the composition and constitution of this part undergo alterations which at the same time alter its relations to the neighboring parts, (whether they be blood-vessels or other structures,) and enable it to attract to itself and absorb from them a larger quantity of matter than usual, and to transform it according to circumstances. Every form of inflammation with which we are acquainted may be naturally explained in this way. With regard to every one, it may be assumed that it begins as an inflammation from the moment that this increased absorption of matters into the tissue takes place, and the further transformation of these matters commences."

He discards the idea that hyperæmia, or vascular turgescence, is present at the commencement of inflammation, alleging that, in those parts, as the cornea, the cartilages, and tendons, in which no vessels exist, the changes produced by this morbid process are in no respect different from what they are in the vascular structures.

The deposit of fibrin, which all pathologists have heretofore regarded as a direct product of the vessels of the affected structures, Virchow insists upon is not an inflammatory exudation at all, but merely the material generated by the inflamed parts, through a change in their condition. The subjoined passages will serve to explain more fully his views upon the subject:—

"While until now fibrin has been regarded as a real transudation from the liquor sanguinis, as the outflowing plasma, I have proposed the explanation, that the fibrin, like the mucus, is a local product of those tissues, on and in which it is found, and that it is conveyed to the surface in the same way as the mucus of the mucous membrane. I then showed you, how we have in this way a most ready explanation of the fact, that in proportion as, in a given tissue, the production of fibrin increases, so also the amount of fibrin in the blood increases; and that the fibrinous crasis is just as much a product of the local disease, as the fibrinous exudation is a product of the local metamorphosis of matter. Never has any one—any more than it is possible for him by a change of pressure directly to produce mucus from the blood in any place which does not itself produce mucus—been able to produce fibrin by any change in the pressure of the blood; what transudes never consists of anything but serous fluids.

"I am accordingly of opinion that, *in the sense* in which it has usually been assumed to exist, *there is no inflammatory exudation at all*, but that the exudation which we meet with is essentially composed of the material which has been generated in the inflamed part itself through the change in its condition, and of the transuded fluid derived from the vessels. If, therefore, a part possesses a great number of vessels, and particularly if they are superficial, it will be able to furnish an exudation, since the fluid which transudes from the blood conveys the special products of the tissue along with it to the surface. If this is not the case, there will be no exudation, but the whole process will be limited to the occurrence in the real substance of the tissue of the special changes which have been induced by the inflammatory stimulus.

"In this manner, two forms of inflammation can be separated from one another; the *purely parenchymatous inflammation*, where the process runs its course in the interior of the tissue, without our being able to detect the presence of any free fluid which has escaped from the blood; and the *secretory* (*exuda-*

tive) *inflammation*, (which belongs more to the superficial organs,) where an increased escape of fluid takes place from the blood and conveys the peculiar parenchymatous matters along with it to the surface of the organs. That there are two different forms is clearly shown by the fact that they occur, for the most part, in different organs. There are certain organs which, under all circumstances, only suffer from the parenchymatous affection, and others again which in nearly every instance exhibit a superficial exudative inflammation."

We offer no comments upon these views other than a mere reference to the palpable contradiction contained in the statement that, "*while in this disease there is no inflammatory exudation at all, the exudation which we meet with is essentially composed of the material which has been generated in the inflamed part itself, through the change in its condition, and of the transuded fluid derived from the vessels.*" We confess our inability to interpret the learned author's meaning.

The last lecture in the book is devoted to the consideration of the nature of *new morbid formations*, embracing the various classes of cancer and tubercle, subjects which have engaged much of the author's attention, and upon which he has apparently thrown new light.

All these formations have their origin in connective tissue, "or in parts equivalent to this tissue;" their elementary principles are nearly all of the same nature, and their similarity is still further shown by the division and multiplication of the nuclei and cells. These traits are found alike in the benign and malignant formations, in the hyperplastic and heteroplastic. They are, however, altogether of a transitory nature; or, in other words, they appertain only to the earlier periods of these growths, for by degrees they individualize themselves, each structure exhibiting some characteristic feature by which it may subsequently be distinctly recognized.

We shall not follow Virchow in his remarks upon the faulty nomenclature of these formations—a subject which has caused so much lamentation among pathologists during the last half century, and been such a stumbling-block to practitioners—nor shall we attempt to present an analysis of all that he says respecting individual formations. It will suffice if we take up a few of them.

Tubercle the author defines to be a granule, or a knob, consisting of a new formation, which has its origin generally in connective tissue, and which, from the time of its earliest development, is necessarily of a cellular nature. The characteristic feature of this new product is the extraordinary abundance of nuclei, as is shown by the fact that, if it be examined as it lies imbedded in the substance which invests it, it appears to be composed almost exclusively of these bodies. A more thorough exploration, however, soon proves that this is an error. By isolating the constituents of the mass, distinct cells are discernible, some of which are very small, and provided each with only one nucleus, and that of extreme exiguity, while others are much larger, and contain from a dozen to twenty-four or even thirty nuclei. In the latter case, the nuclei are always very diminutive, homogeneous, and shining in appearance.

The subjoined extract will serve to show the opinion which Virchow entertains respecting the relations which tubercles sustain to other morbid products, as pus and cancer, the nature of its organization, and its liability to various degenerations.

> "This structure, which in its development is comparatively most nearly related to pus, inasmuch as it has the smallest nuclei and relatively the smallest cells, is distinguished from all the more highly organized forms of cancer, cancroid and sarcoma, by the circumstance that these contain large, voluminous, nay, often gigantic corpuscles with highly developed nuclei and nucleoli. Tubercle, on the contrary, is always a pitiful production, a new formation from its very outset miserable. From its very commencement it is, like other new formations, not unfrequently pervaded by vessels, but when it enlarges, its many little cells throng so closely together, that the vessels gradually become completely impervious and only the larger ones, which merely traverse the tubercle, remain intact. Generally fatty degeneration sets in very early in the centre of the knot, (granule,) where the oldest cells lie, but usually does not become complete. Then every trace of fluid disappears, the corpuscles begin to shrivel, the centre becomes yellow and opaque, and a yellowish spot is seen in the middle of the gray translucent granule. This is the commencement of the *cheesy metamorphosis* which subsequently characterizes the tubercle. This change advances from cell to cell farther and farther outward, and it not unfrequently happens that the whole granule is gradually involved in it."

Again, referring to the transformation of tubercle, some distance farther on, Virchow says:—

> "As soon as it has once attained a certain size, as soon as the generations of new corpuscles, which develop themselves out of the old histological elements by a continual succession of divisions, at last lie so close to one another as to cause a mutual arrest of development, gradually to induce the disappearance of the vessels of the tubercle, and thereby to cut off their own supplies, then they begin to break up, they die away, and nothing remains behind but débris—shrunken, disintegrated, cheesy material."

There is here, it will be perceived, a distinct recognition of the existence of vessels in tubercle, and the assertion, emanating as it does from one of the acknowledged microscopical leaders of the day, cannot fail to carry conviction into the minds of the most skeptical. For nearly a quarter of a century we have ourselves strenuously contended in our lectures and in our writings, in season and out of season, for the presence of this essential element in tubercle; for we could not, by any facts, reason, or argument that we could call to our aid, account for the various changes and transformations which tubercle is liable to undergo in any other manner. The only reward which we received for our constancy to our opinion was ridicule, if not down-right obloquy and contempt; sometimes a kind of pity for one so blind and obstinate! But now that Virchow is in the field, teaching the cellular origin and nature of tubercle, its power of proliferation, its similarity to all other new formations, and the existence of vessels in it, all doubt must necessarily cease. "*Magna est veritas, et prævalebit.*"

Another doctrine which is distinctly enunciated in this work is the inflammatory origin of tubercle. Here, again, there is no special novelty, for this doctrine has been strenuously taught in this and other countries for a long time. Latterly, however, many have abandoned their ground, and espoused the opposite side of the question, owing chiefly, it would seem, to the influence exerted upon the professional mind by the advocates of the stimulant practice in the treatment of disease, of which John Brown was in the last century, as Dr. Todd has been in this, the great prototype. There are, however, pathologists who have held on firmly to their views, despite the changes going on around them; men who do not barter away their opinion merely for opinion's sake.

Upon the minute structure of *cancerous* formations, Virchow has not favored us with anything of a very satisfactory nature. Scirrhus hardly meets with any allusion, and encephaloid fares but little better. The fact is, the whole subject is so jumbled up as to render it extremely difficult to catch the author's meaning.

The *colloid* growth, first described by Laennec in the early part of the present century, he proposes to call the mucous cancer, from the fact that there is always a certain amount of mucus contained in its intercellular substance. He finds its histological type in the normal structure of the umbilical cord. By this change of nomenclature, we know, says Virchow, exactly what is before us; we know it is cancer, the stroma of which differs from that of ordinary cancer in the presence of mucus and the gelatinous nature of the mass.

The term *epithelioma,* recently introduced by Hannover, the author condemns as being wholly inadmissible in the form of tumor which it was originally designed to designate, inasmuch as epithelial cells are also found in other morbid growths, both benign and malignant. We quote the following paragraph in illustration of his opinion upon this interesting point. Our own view has always been, since the term epithelioma has come into vogue, that the disease which it is intended to characterize is in general merely a form of scirrhus, or scirrho-encephaloma, modified in its structure by the nature of the tissues in which it is developed.

"Again, if you attempt to distinguish cancroid growths from real cancer by the epithelial structure of their elements, you will herein too give yourselves trouble in vain. Cancer proper has also elements of an epithelial character, and you need only turn to those parts of the body, where the epithelial cells are irregularly developed, as for example, in the urinary passages, and you will meet with the same curious bodies, provided with large nuclei and nucleoli, which are described as the specific, polymorphous cells of cancer. Cancer, cancroid, or epithelioma, pearly tumors or cholesteatoma, nay, perhaps the dermoid growths which produce hairs, teeth, and sebaceous glands, and so frequently occur in the ovary—all these are formations in which there is a pathological production of epithelial cells, but they constitute a graduated series of different kinds, which extend from those which are entirely local, and, in the usual meaning of the word, perfectly benignant, to the extremest malignity. The mere form of the cells which compose a structure is of no decisive value. Cancer is not malignant because it contains heterologous cells, nor cancroid benignant because its cells are homologous—they are both malignant, and their malignity only differs in degree."

Virchow teaches that the malignancy of morbid growths is materially influenced by the amount of juice pervading them. Those for example which are dry are comparatively benignant, while those which are moist or succulent are always more or less malignant. The former, in consequence of this peculiar attribute, are less liable to spread; or, what is the same thing, their influence is chiefly local, and they often remain a long time without producing any serious mischief. "In cancer proper the local progress is often very rapid and the disease early becomes general; a cure, even for a short time, is so rare that in France the complete incurability of cancer, properly so called, has been asserted and maintained with success."

The opinion that ordinary cancer is incurable by medicine or the knife, is, we presume, not limited to France. It pervades the entire educated and experienced portion of the profession in all parts of the world. We have, ourselves, in an extensive practice of upwards of twenty-five years, involving numerous operations for the cure of carcinoma in various parts of the body, not seen a solitary instance that was eradicated by medicine, or that did not recur sooner or later after extirpation, and ultimately carry off the patient.

But we must bring this notice to a close. In doing so we can conscientiously declare that, although our task has by no means been a light one—owing to the twofold reason that a number of topics have been confusedly mixed up with each other, when they ought to have been discussed separately, and to our anxiety to present a clear and satisfactory outline of some of the more important pathological deductions in which the work abounds—we part with the author with feelings of deep regret.

In traveling with him over his interesting and beautifully illustrated pages, we were constantly impressed with the conviction that we were in the company of a great man, an honest cultivator of pathology, intent upon the acquisition of new medical territory by the development of new scientific truths. It would, perhaps, be premature to pronounce a definitive judgment upon the work which we have thus rapidly passed in review, or to form a final decision respecting the real value of the labors and researches of Virchow. The readers of the Cellular Pathology will regard these matters very much according to the stand-point from which they may survey them, or according to their previous notions of pathology, and their ability or inability to interpret correctly the author's language and doctrines. To appreciate the work, and to do full justice to its teachings, it must be thoroughly dissected, carefully analyzed, and profoundly studied. A superficial perusal must inevitably eventuate in disappointment. Whatever the ultimate verdict of the profession may be in regard to it, it is easy to foresee that it must exert, at least for a time, an extraordinary influence upon the medical mind of this and other countries. One effect, and not the least important, that may be expected from its publication, is that it will lead to new inquiries and investigations, whereby the great truths which Virchow has disclosed will be placed in a clearer light and clothed in a more enduring garb, while the errors, if any there be, will be exposed and corrected. Already a number of his statements are received and cherished as established facts in science; stamped with the great seal of the profession both in the Old World and the New. That all that he has written in this book is true, or capable of withstanding the test of varied, patient, and elaborate scrutiny, no one, not even the author himself, will pretend. Amid so much good grain there must necessarily be some chaff.

It has been said of Virchow that he is an enthusiast, and that he is ambitious of becoming the founder of a new school, the school of cellular pathology. All seem willing to admit that he possesses a high order of talent, blended with unquestionable genius, extraordinary industry, and a boundless zeal in scientific pursuits. It is asserted that he lacks judgment, that he is hasty in his generalizations, and that his statements are often contradictory, and at times even absurd. We bring no such charge against Rudolf Virchow. If his love of science makes him an enthusiast, and if his ambition impels him to the performance of labors calculated to throw new light upon obscure points in pathology and therapeutics, are we to arraign him for that? If a tithe of what he has written in this book be true, then must we unquestionably and without hesitation regard Virchow as an able expounder of science, an original investigator, an admirable observer, a great thinker. Time determines all things, and to this arbiter the illustrious German may well submit his claims to the gratitude of this and of future ages. We should neither adopt hastily nor reject foolishly. The Cellular Pathology furnishes a subject on which every sensible inquirer may prove his ingenuity. "*Materiem, qua sis ingeniosus, habes.*" We have here ourselves merely glanced at it; to do it full justice would require a much larger space than we can afford. We have opened the casket, but taken out a few only of the jewels.

ART. II.—*Lives of Eminent American Physicians and Surgeons of the Nineteenth Century.* Edited by SAMUEL D. GROSS, M.D., Professor of Surgery in the Jefferson Medical College of Philadelphia. 8vo., pp. 836. Philadelphia: Lindsay & Blakiston, 1861.

BIOGRAPHY ranks among the most popular of studies. Almost every one is curious to know something of the domestic habits, the peculiar traits of character, and the events which marked the career of such as have distinguished themselves in the fields of science or of literature; in the arts which contribute to the safety, comfort, and happiness of man, or whose names have become identified with one or other of the departments of the world's history.

The life of the physician, in its even tenor, as ordinarily passed amid the seclusion of the study or within the privacy of the chamber of sickness and of suffering, furnishes but few incidents of a character to interest the general reader. This is true even of those members of the profession who have aided most largely in extending and enriching the science of medicine, and of rendering more exact and positive its ministrations, as well for the prevention as for the cure of disease.

The public, though benefited by the labors of the physician, in improvement of health and prolongation of life, to a much greater extent than they are aware, take small pleasure in hearing of his pursuits and daily cares; of the nature of the one and the sources of the other they can form but an imperfect conception. And yet the career of the physician is not, in every instance, without its heroism and its romance. There are to be found among the professors of the healing art a goodly number who, while risking their lives when deadly pestilence pervades the land in ministering to the wants of the down-stricken, in assuaging their sufferings, and affording them all possible protection from the destruction that smitest in darkness and wasteth at noonday, have exhibited more true courage, have confronted more actual danger, witnessed more thrilling and appalling scenes, and have performed a far greater and more positive amount of good to mankind than the conqueror in many a well-fought field.

The lives of nearly all the early physicians of our own country are replete with interest: many of them eminently so. They not only devoted themselves diligently and successfully to the legitimate practice of their profession amid, perhaps, the very pioneers of that advancing tide of immigration, destined to invade and people and bring into cultivation the remote plains and forests of the country, but became intimately associated with, if perchance they were not the originators of, whatever movements were made to augment the pecuniary, physical, moral, political, and religious well-being of the communities in whose midst they were located.

It was a fortunate circumstance, that so large a proportion of the earlier practitioners and teachers of medicine in this country were, in character, abilities, and mental culture, above the common standard. The major part of them possessed, in addition to fine natural abilities, all the advantages derivable from a thorough professional training at the most distinguished schools and hospitals of Europe. It was this which enabled them to secure for the American physician that high social position which he has ever since maintained. Removed, in a great measure, also, from the cramping influence which, in their day, the leading authorities in the several departments of medicine exercised over the entire profession on the other side of the Atlantic, and called upon to contend with disease amid communities placed under influences very dissimilar to those to which the inhabitants of Europe were subjected, and which, as might be expected, had the effect of modifying, in no inconsiderable degree, its character, phenomena, and course,—the early physicians of this country were compelled to rely, almost exclusively, upon their own observations and experience. Upon these they succeeded in basing a system of practice of the soundness and efficiency of which we have ample testimony. It is from the examples thus set them that the physicians who succeeded these pioneers of American medicine acquired much of that independence in theory and boldness of practice by which, to a very great extent, they are still characterized.

The biographies of very many of the early physicians of this country are yet to be written; while the materials necessary for their preparation are fast disappearing. They who will take upon themselves the labor of collecting such of these materials as may yet be procured, and of marshaling them in order, will receive the thanks of the profession, for preserving from oblivion the names of many of its members, who, by their characters and attainments, their industry and their skill, have conferred upon it equal honor and enrichment; while the public generally cannot fail to become interested in the narratives of lives that were spent exclusively in its service, and to acquire from them a more correct appreciation of the rightful claims the physician has upon its gratitude, protection, and support.

The names and labors of such men as Kearsley, Kuhn, Thomas Bond, Shippen, Redman, John Jones, Morgan, Ross, Currie, Dewees, Say, Parke, Tilton, Samuel P. Griffiths, Hutchinson, Annan, Seybert, and many more, deserve to be commemorated, as well for the credit of the profession of which they were distinguished members, as on account of what they so freely contributed toward the good of their fellow-creatures.

Few are the attempts that have been made to popularize the biography of American physicians and surgeons. Of the lives of many short notices may be found in the medical journals, and in the printed transactions of our State medical societies; while upon the death of one particularly distinguished for his position or his talents, there has been occasionally prepared, by special appointment, a memoir of greater fullness and pretension.

Almost the only systematic series of medical biographies, adapted to present a few of the more distinguished of the physicians and surgeons of our country in their true light to the notice of the general community, is that of Dr. James Thatcher, of Massachusetts. In this work, which was published in two octavo volumes, in the year 1828, a large mass of valuable facts, illustrative of the career, character, and professional labors of medical worthies, who flourished in the earlier period of the settlement of the United States and subsequently to the war of the Revolution, have been preserved from the oblivion to which they were fast descending, and arranged in a manner adapted to both interest and instruct.

Some years subsequently, Dr. Stephen W. Williams, also of Massachusetts, entered with great zeal upon the task of continuing the work commenced by Dr. Thatcher. As the result of his labors, he presented, in 1845, an octavo volume of some six hundred and fifty pages, comprising outlines, more or less extended, of the lives of American physicians who had died subsequently to the year 1828. From the energy, industry, and zeal evinced by Dr. Williams in the prosecution of his favorite theme, we have no doubt that, had he lived, he would have rendered more complete, by the additional materials he had accumulated, many of the biographical sketches already published, and supplied the lives of other physicians who, from their characters, their professional attainments, and successful labors, present strong claims upon our respect and gratitude.

The works just noticed, however valuable they may be esteemed, have by no means exhausted the subject, or occupied the entire field of American medical biography. The lives of many who were distinguished in their day for their varied and exact knowledge, and their practical skill as physicians and as surgeons, have not yet been told. Even of the physicians and surgeons whose names stand prominent upon the list of those who have most adorned, enlarged, and magnified the science and the art of healing in our midst, there are still wanting biographies through which the profession and the community may acquire a just estimate of the lives they lived and the works they performed — biographies in which, "without favor or prejudice," their social, moral, and intellectual worth is faithfully depicted; the eulogistic hyperboles of devoted friends and partisans, and the misrepresentations and detractions prompted by rivalry or envy being alike overlooked or corrected.

There is ample room for a new volume, or even volumes, devoted to the commemoration of the eminent departed physicians and surgeons of our land. All that is demanded to render such a work popular, in and out of the profession, is, that they who contribute the materials for its composition shall present, in a clear and simple narrative, the prominent events of the lives of those of whom they write, with an honest judgment of their characters as men, and of their standing in a professional point of view.

For the work before us we are indebted to the suggestion and promptings of Dr. Gross; it originated in a desire on his part to popularize the profession, and to place its services and claims more conspicuously, than had yet been done, before the American people. Not only does it comprise several contributions from his pen, but it has received throughout the benefit of his editorial supervision. It furnishes the lives of a number of those who have gained for themselves a high rank upon the roll of American physicians and surgeons, as well by their talents and skill as by the extent to which they have enriched and illustrated their profession and magnified it in public estimation. The lives are ably and candidly written, and present a very fair delineation of the career and standing of their respective subjects. There is, certainly, no very glaring attempt to extenuate their faults and shortcomings or to laud in excess their virtues and their worth.

The lives of Drs. Rush and Physick are among the most elaborate and discriminating of those embraced in the present series. The peculiar traits of character by which those gentlemen were respectively distinguished, their mental constitution and endowments, their professional merits, their labors in augmentation of the general fund of medical knowledge, and toward the perfection and extension of medical skill, are ably and faithfully delineated; and the particular relations which each of them held with respect to the community at large are indicated with truthfulness and candor.

No one can enter upon the perusal of either of the biographies referred to without becoming deeply interested; nor can any one rise from their perusal without having acquired a vivid idea of the two men of whom they tell,—their moral, intellectual, social, and professional standing.

Drs. Rush and Physick were, unquestionably, two of the most eminent of the earlier physicians of this country. By general consent, the rank of father of American medicine has been conferred upon the first, as that of father of American surgery has been upon the latter. To this honor they were, in all respects, justly entitled, from their talents, their industry and acquirements; the lustre they shed upon the American medical profession, the purity of their moral character, and the invariable amenity and dignity of their deportment, and the impulse which they gave, both by precept and example, to the careful cultivation and improvement in our midst of their respective branches. They taught their contemporaries and successors, as well physicians as surgeons, to rely less upon authority and precedent and more upon original observations and independence of thought in their investigation of the causes, nature, and treatment of diseases generally, and in their inquiry into the proper adaptation of chirurgical means to remedy the various accidents and injuries and deformities to which the human system is liable.

The eminence of Rush and Physick in their respective departments was not due to the comparatively small amount of professional knowledge and skill, requisite at the period when they flourished, to confer distinction, and the few among their contemporaries who were able or willing to contest with them for the mastery. No matter at what period they had commenced their professional career, earlier or later, they could not fail, with their peculiar qualifications, natural and acquired, to have attained the foremost rank among their professional contemporaries.

It is an error to suppose that Rush and Physick practiced and taught at a period when the medical profession of the country was composed mainly of ignorant or unskillful members, over whom pre-eminence was at best but an equivocal honor. On the contrary, from the commencement to the close of their career, there were numbered among their professional contemporaries many who were distinguished alike for their intellectual powers and their high professional attainments and skill; by several of whom their pre-eminence was very reluctantly and tardily acknowledged.

Dr. Rush was among the most voluminous of our older medical authors. Besides his "Medical Inquiries," in four large octavo volumes, we have his admirable work on the diseases of the mind; his notes to the works of Sydenham, Pringle, Cleghorn, and Hillary; and a volume of sixteen addresses, introductory to his courses of lectures in the University of Pennsylvania. In addition to his more strictly professional writings, Dr. Rush published a number of essays, literary, moral, and philosophical, most of which were collected and published in a volume in the year 1798.

Our earlier physicians published but little. The fact is, that previously to the termination of the first ten years of the present century, there was but little encouragement for the publication of medical works of any kind, beyond those employed as text-books by our more popular teachers in their public or private courses, or the few treatises which were considered, if not absolutely necessary, at least very useful, as books of reference in cases of doubt or emergency. For original medical works, by American authors, it may be said, without exaggeration, there was no demand. We rather think that there was entertained an opinion, both in and out of the profession, that the study of books was calculated to impair the skill of the physician,—to render him more of a theorist than a ready and skillful practitioner. We have been presented, nevertheless, with some able productions by our elders in the medical profession in this country. Nearly all of these appeared, however, either as detached papers or essays; and were either printed separately in pamphlet form, or appeared as contributions in one or other of the few professional journals then in existence.

Though presented in this humble way, these papers will be found replete with sound, practical sense. They evidence the close and careful habits of observation possessed by their authors, the cautiousness and general accuracy of their deductions, and the little bias they experienced, in their etiological, pathological, and therapeutic deductions, from the prevalent medical systems of their day. The style of these essays is, in general, uncommonly pure, clear, concise, and forcible. Were they collected and published in a form that would place them within the reach of the members of the profession generally, a very large proportion would be found, even at the present day, to be eminently instructive, more especially from the light they shed upon the causation, character, and course of the leading endemic maladies of America, and the history and nature of the several epidemics of disease that have here in the olden time, from period to time, prevailed. Such a publication would constitute a fitting monument to commemorate the talents, the industry, and public spiritedness of those who inaugurated in our midst the systematic study and practice of the healing art.

To become convinced of the distinguished character, the high professional attainments and elevated social standing of the compeers of Rush and Physick, it is only necessary to refer to those whose lives are recorded in the volume before us, and they constitute not a tithe of the eminent men who, contemporary with the "fathers of American medicine and surgery," adorned and magnified the medical profession in this country. Among the contemporaries of Rush and Physick, included in the list of those whom the volume of Dr. Gross commemorates, are such men as Samuel

Bard, James Thatcher, John Warren, Caspar Wistar, W. J. Macneven, Samuel L. Mitchill, Thomas C. James, Samuel Brown, David Hosack, and E. McDowell.

Dr. Samuel Bard, of New York, was three years older than Rush, and twenty-six years older than Physick; the former he survived eight years, while he preceded the latter to the grave by some sixteen years. Dr. Bard is better known to the physicians of the United States, whose professional studies were prosecuted during the early portion of the present century, by his very excellent compend of midwifery—a compend which, for the excellency of its arrangement and the clearness and accuracy of its teachings, has not been excelled, scarcely equaled, by any that has since appeared. The name of Dr. Bard is most frequently quoted, however, by medical writers, in connection with his treatise on the nature, cause, and cure of the "*angina suffocatoria, or sore-throat distemper,*" which was originally published in the first volume of the Transactions of the American Philosophical Society. This treatise presents a most graphic description of the epidemic throat distemper which prevailed in certain parts of New York in 1771, showing most conclusively its entire identity with the epidemic diphtheria of the present time. It proves Dr. Bard to have been a close and accurate observer, and prepared to record readily his observations in language at once simple and chaste, but withal clear and forcible.

Dr. John Warren, of Boston, was eight years younger than Rush, but fifteen years older than Physick. He survived the first only two years, while the latter survived him some twenty-two years. Dr. Warren was equally distinguished for his classical attainments, his professional knowledge, his untiring industry, and his skill both as a physician and as a surgeon; for his high moral standing; his ardent patriotism, at a time when patriotism demanded the sacrifice of every personal interest for the common good; and for his unbounded social popularity.

Dr. Caspar Wistar, younger than Rush by sixteen years, and the senior of Dr. Physick by seven years, outlived the first five years, while the latter outlived him some nineteen years. As a teacher of anatomy, as a medical and surgical practitioner, and as a promoter and cultivator of general science, his name is widely and favorably known. With the exception of Drs. Rush and Physick, no public teacher commanded more fully the respect and esteem of his class than Dr. Wistar—none ever wound himself more effectually around the hearts of those who came in immediate contact with him. His deportment was always kind and conciliatory, and his manners invariably highly popular in the best sense of the term.

Dr. Samuel L. Mitchill, of New York, whose name ranks among the most active and prominent of the pioneers who devoted successfully their time and their talents to the promotion in America of medicine, in common with the natural sciences generally, was born in 1764, nineteen years before Rush, whom he survived eighteen years. He was four years older than Physick, and died six years before him. He was renowned for much and varied learning, for a genius, prompt in execution and original in combination, and for a rare simplicity of character. He was a most successful promoter of physical science. He was more, in fact, of a natural philosopher than a physician.

Dr. David Hosack, of New York, whom Dr. Currie designates as "the polite scholar, the learned and skillful physician, the sincere friend, and accomplished gentleman," was born twenty-four years after Rush, and one year after Physick. He survived the first twenty-two years, and preceded by two years the latter to the tomb. He published a number of essays on different medical subjects, replete with sound practical remarks. He is best known, however, by his monograph on the laws of contagion, in which is set forth and defended the doctrine that the contagion which produces yellow fever is a morbific principle generated beneath a tropical sun and imported into this country in the persons and clothing of the crews, in the air of the hold, and in the cargoes of infected vessels arriving from yellow-fever localities. This principle in a free, healthy, atmosphere he believed to be comparatively inert, but that it multiplied itself rapidly, and assumed an increased virulence in a hot, confined, and impure atmosphere.

Dr. Ephraim McDowell, one of the most distinguished, bold, and successful surgeons of the West during his day, and the first who ever performed the operation of ovariotomy, was sixteen years the junior of Dr. Rush, whom he survived twenty-seven years. He was three years only younger than Dr. Physick, and died seven years before him. He is represented as a fine classical scholar; while history and polite literature were the subjects which, outside the graver sciences more intimately connected with his own professional studies and pursuits, occupied most of his time and attention.

Dr. James Thatcher, one, perhaps, of the most voluminous among the earliest medical writers of our country, was seven years younger than Rush, and sixteen years older than Physick. He survived the first thirty-one, and the latter seven years. He was among those patriots who devoted themselves to the service of the country in the darkest period of her history. He was a man of science, and of extensive literary acquirements, and a diligent and successful practitioner of the healing art. Among his leading works may be enumerated a Journal of the Events of the Revolutionary War, issued in 1824, and a second edition in 1826; a new American Dispensatory, issued in 1810, and running through four editions in eleven years; a modern Practice of Physic, a first edition in 1817, and a second in 1821; a Monograph on Hydrophobia, in 1821; a volume of American Medical Biography, in 1828; an essay on Demonology, Ghosts, Apparitions, and Popular Superstitions, in 1831; a History of Plymouth, in 1832, and a second edition in 1835. In addition to these, he was the author of a number of valuable papers on medical, economical, and scientific subjects.

Dr. W. J. Macneven was born in 1763, and was, consequently, eighteen years younger than Rush, and five years the senior of Physick. He survived the first twenty-eight, and the latter four years. He was a man of liberal education, and a highly esteemed teacher of medicine in New York for upwards of twenty years, during which period he was constantly engaged in contributing, with zeal and ability, to the promotion of the best interests of his profession.

Dr. Thomas C. James, the polite scholar, the successful practitioner of obstetrics, and for many years the highly popular professor of midwifery and of the diseases of women and children, in the University of Pennsylvania, was born twenty-one years after Rush and two years before Physick. The former he survived twenty-two years, but died two years before the latter.

Dr. S. Brown, an esteemed medical practitioner and teacher in the West, one who sought by all honorable means to promote, assert, and sustain the dignity, vindicate the honor, and elevate the status of the medical profession, was born in 1769, twenty-four years after Dr. Rush, and one year after Dr. Physick. He survived the former seventeen years, while his death occurred one year previous to that of the latter.

Of the contemporaries of Rush and Physick whose memoirs are not included among those collected by Dr. Gross, there is a very long list, embracing names of individuals in no respect inferior in standing and in talents—no less earnest and untiring in their efforts for the enlargement of medical knowledge, and for the elevation in character, in educational preparation, and in skill, of the entire medical profession of our country, to those whose names are given above.

It would occupy too much space were we to attempt to notice severally the different biographies comprised in the volume under review. They have been prepared, all of them, with great ability, and evince much more candor and kindness, a far more just appreciation of character and professional worth, than, perhaps, we had a right to expect, when we take into consideration the large space in public attention most of them occupied in their lifetime; how nearly the period in which they flourished touches upon our own, too near to extinguish entirely the influence of the friendships and enmities, the partisanship and rivalry, they excited when they lived;

and of the many circumstances, connected with the career of most of them, by which the formation of a just estimate of their professional standing and worth is rendered extremely difficult.

To those who experience the laudable desire to know something of the lives and services, the qualifications and the labors of the medical men to whose teachings, example, and suggestions is to be mainly attributed the present advanced condition, in this country, of medicine as a science and an art, we would recommend the work of Dr. Gross as one presenting superior claims to their notice, as well from the truthfulness of its narratives, as for the ability exhibited generally in its preparation. It cannot fail, we think, to be found holding a prominent position in every library in our country—most certainly in the library of every American physician.

ART. III.—*Chapters on Diseases of the Ovaries, translated, by permission, from Kiwisch's Clinical Lectures on the Special Pathology and Treatment of the Diseases of Women; with Notes and an Appendix on the Operation of Ovariotomy.* By JOHN CLAY, M.R.C.S., Surgeon-Accoucheur to the Queen's Hospital, Birmingham, etc. etc. London: John Churchill, 1860. pp. 430.

THIS work, as we are informed in the preface, is a translation from Scanzoni's edition of the late Prof. Kiwisch's admirable work on the "Pathology and Treatment of the Diseases of Women, of the chapters relating to diseases of the Ovaries." Including certain notes and tables by Mr. Clay, and notes by Scanzoni, it purports to be a complete monograph on the subject of the ovaries, their diseases and treatment, and as such, we are led to anticipate a thorough handling of the subject in all its details. The editor gives some account of his efforts to obtain the materials for the work, and the difficulties encountered. He says:—

> "I originally intended to have appended to Kiwisch's tables all the operations that were not included therein, down to the present time; but on comparing his collection with the cases as originally reported, it became obvious that the details as given by him were very scanty, and in many instances very inaccurate, and not available for practical purposes." * * *

While deliberating, under these circumstances, upon the best course to pursue, he was—

> "Counseled to commence, *de novo*, by having recourse to the cases of ovariotomy as originally published, instead of trusting to the accuracy of compilers. This plan I at once proceeded to carry out, as far as was practicable; but as many American and some German cases were widely distributed over the

periodical literature of each country, it was found impossible to procure them; and finding by comparison that the tables of Drs. Hamilton and Lyman, of America, and Dr. Simon, of Germany, were exceedingly accurate, such cases as I had not in my collection I have transcribed from these sources with adequate acknowledgment. * * * To insure accuracy, the tabulated details of each case operated upon in Great Britain, were forwarded to the respective operators for revision; reports of fresh cases were also solicited, and in many instances proofs were forwarded for correction. * * * *It is to be regretted that the details of many of the unsuccessful cases are not more ample.* * * *

"I have a less pleasing duty to perform, in justice to those who have so kindly aided me in my endeavors, in mentioning those who were not courteous enough to reply to my communications for particulars: these were Dr. Bird, London; Dr. Simpson, Edinburgh; and Mr. Terry, of Bradford. *It is a duty incumbent on all who have performed this operation to place the results of their experience before the profession, as by their undertaking it they have given some encouragement to others to follow their example.* With reference to Dr. Bird, these remarks are particularly applicable, as he has placed some of his perhaps more favorable experience before the profession, and, by the omission of full particulars of his more unsuccessful practice, has left his report in an exceedingly unsatisfactory state. It was on this account that I was particularly anxious to have correct details of diseases, and repeatedly forwarded papers to him; but I have not received even an acknowledgment from him. It is not for me to speculate on the causes which induced him to withhold the information, which has, as I have been informed, been often sought in vain by others as well as by myself."

We have been induced to give these lengthy extracts from the introduction of Dr. Clay, in order to show that such views obtain in other places as well as our own country. Too many men are fond of heralding their successes, but omit all notice of their failures, and from this cause it is that the profession are still unable to come to the proper conclusion concerning ovariotomy, in common with other remedial measures.

It was not until within the last century that any such means as ovariotomy was attempted for the relief of such cases as were afflicted with disease of the ovaries. Every plan that the wildest imagination could conceive of was employed to palliate, if not to relieve, the sufferings of these unhappy females. About the only method which seemed to offer any prospect of success was the tapping of the cyst when the contents were fluid, and thus diminishing its size.

The early history of the operation of ovariotomy was for a long time involved in much obscurity; the majority of writers, however, gave the credit of its first performance to L'Aumonier of Rouen, while others claimed it for Professor Galenzowski, or for Professor Dzondi. This subject having been carefully investigated by Professor Gross, then of Louisville, now of Philadelphia, he, in a paper read before the Kentucky

State Medical Society, in October, 1852, clearly demonstrated the incorrectness of these claims, and showed conclusively that Dr. Ephraim McDowell, of Danville, Kentucky, in 1809, performed the first recorded operation for the removal of the ovary. For a complete resumé of his cases, as well as a highly interesting biography of this distinguished surgeon, we refer our readers to the article, entitled "Origin of Ovariotomy: with an account of the Life and Services of the late Dr. Ephraim McDowell, of Kentucky," by Prof. S. D. Gross, published in the number of this journal for November, 1860.

The views of Professor Gross are now generally adopted, and at a meeting of the Obstetrical Society of London, held February 6th, 1861, Dr. Tyler Smith read a paper on *Ovariotomy*, in which he fully agrees in ascribing the full honor of its first performance to Dr. McDowell.* It is, therefore, with much surprise that we find not only that no allusion has been made to the originator of this operation, in the work before us, but the editor has carefully refrained from any further account of its history than the following: "It appears the operation was mentioned by *Schlenker* and *Williers* in the years 1723 and 1731. But it first came into favor in the present century principally; and within the last twenty years English and American physicians have interested themselves in its history," etc. Yet, as he places the case of L'Aumonier in his table of *successful cases of ovariotomy*, with the date of 1782, he thus deprives Dr. McDowell of his just rights as directly as though he openly denied the claim which has been made for the bold Western surgeon. This is a fault which is too common with our brethren "across the water;" whether from a jealousy of the rising giant of the western hemisphere, or a culpable negligence, we are unable to decide.

Since that time the operation has been performed very many times by operators in various countries; and in the tables furnished by Dr. Clay we have the records of 242 cases where one or both ovaries were removed, and the patients recovered from the operation; 183 cases where one or both ovaries were removed, but the patients died in consequence of the operation; 24 cases where the cyst was only partially excised, 14 of whom died; and 118 cases of *attempted* ovariotomy, where either no ovarian tumor existed, or the operation was abandoned; of the latter, 41 died.

But, from the tenor of Dr. Clay's prefatory remarks, as well as from our experience relative to the reports of physicians concerning their unsuccessful cases, we have ample room to believe that, were the list complete, the number of fatal cases would be vastly increased. Hence arises the inquiry, "Is ovariotomy a justifiable operation?" This the editor (Dr. Clay) answers in the affirmative. He says, alluding to the tables above mentioned:—

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* Med. Times and Gaz., London, Feb. 16, 1861.

> "The tables show one fact, and which strikingly illustrates the advisability of the performance of the operation; and that is, out of 395 completed operations, 212 resulted in recovery. This is the more gratifying, as in many of the successful cases remedies were used previously to the operation being performed, and different operative procedures adopted with the hope of curing the disease or arresting its progress, but without success, and in many instances death was imminent. These cases of recovery may be regarded as triumphs of surgical skill, by means of which so many lives were secured, in several instances for years, which would otherwise have been lost to society. * * *
>
> "From a careful review, therefore, of the whole of the facts connected with the operation of ovariotomy, as gathered from the work now translated, and from the preceding tables, I have no hesitation in expressing my opinion that *the operation is to be highly recommended in ovarian tumors under the circumstances previously narrated, as it is the only mode of removing a disease incurable by any other means.*"

Kiwisch, however, appears to be more in doubt upon the subject, regarding it as yet a matter of dispute, and only admissible under peculiar conditions, which he carefully lays down. He says:—

> "At present it has been undoubtedly proved by many facts that women can lose an ovary, or even both by operation, without any considerable injurious consequences being caused thereby, (sterility in the latter case excepted.) The operation in some cases was also acceptable: for it freed the patient not only from a very painful, but also from a dangerous malady, and led to perfect health. As regards the question respecting the admissibility of the operation, which is next to be considered, the conditions must first of all be discovered under which such favorable results were obtained. * * * * *
>
> "Even if all the cases of completed and attempted extirpations were known to us, no correct conclusion upon the advisability of the operation could be deduced from the results hitherto obtained, that is, from the numerical comparison alone; because the choice of the cases, the operative procedure, and the after-treatment produce essential changes in the results obtained, and therefore more favorable statistics may be reasonably expected in future, by a greater attention on the part of the operators to these indications. When we consider the results of the practice of some physicians, we must certainly be astonished at the successful results of the operations performed by them. Thus, Bird has operated 6 successive times with success; Clay, in 14 cases in which the operation was completed, cured 11 patients; Walne and Ephraim McDowell, in 6 extirpations lost only 1 patient; Lane, in 5 operations, had to lament 1 death only. On the other hand, several others have only unsuccessful cases to show. Thus, for instance, Lizars has operated four times: once he opened the body and found no tumor—the patient survived; a second time he was obliged to leave the operation uncompleted, in consequence of adhesions; a third time he

found both ovaries diseased, and left one—the two latter patients recovered from the operation; while the fourth, in whom the operation was completed, died in fifty-six hours. Buhring also operated 4 times, and lost 3 patients, but saved the fourth, in whom the operation could not be completed by incision. We ourselves, also, have operated 5 times without success, and others have had similar results.

> "It follows, from all that has been said, that, at present, it is very difficult to come to a well-grounded conclusion upon this operation; and we can, therefore, only endeavor in the following to approach the truth as nearly as possible. It is probable that about half of the patients hitherto operated upon have lost their lives, and generally in a few hours or days."

We can readily agree with Kiwisch, that this fact should be very seriously considered when an operation is proposed upon a person who is suffering but slight inconvenience by the malady, and where the life is not decidedly threatened.

Again, though the patient may not die immediately from the operation itself, yet in many instances the sequelæ are painful, tedious, and ofttimes terminate in death.

> "Finally, it must yet be made the subject of inquiry in how far a relapse of the cancer did not take place in many patients from whom tumors, apparently cancerous, were removed, although there is no confirmatory experience known to us. It must be further mentioned that the operation, in some cases, is very difficult to perform, tedious, and painful, and must often be abandoned after it has been tolerably far advanced. Thus, very great adhesions, and uncommon breadth and shortness of the pedicle of the tumor, place insurmountable obstacles in the way of the operation; and although such incomplete operations carry off comparatively few individuals, at the moment, they make the condition of the patient much more deplorable than before."

After some remarks upon the difficulty of diagnosis, a subject upon which the profession of this city have recently been much enlightened by several valuable papers read by Dr. Washington L. Atlee before the Philadelphia County Medical Society, Professor Kiwisch remarks:—

> "But, on the other hand, it must not remain unmentioned that the disease is often so distressing that the most urgent wish is expressed by the patient to be freed from the tumor, even with the apparent danger to life. In many cases, also, as the disease progresses, a longer continuance of life is not to be thought of, while in such cases the operation may have a perfectly satisfactory termination. Besides, this result was obtained in no small number of patients in a very short time, so that several could leave their bed in from three to five weeks. In some patients the operation was easily and quietly performed, and its immediate consequences were not always very distressing or unsatisfactory."

The importance of a correct diagnosis is especially dwelt upon, and it well may be, seeing that distinguished surgeons have laid open the abdomen and found no tumor; while others have fixed the day, assembled their assistants, and lo! the tumor had disappeared. To be sure, some of these errors can hardly be considered in any way excusable, as where the pregnant womb has been positively declared an ovarian tumor, or where a similar announcement has been made as to a collection of fæces.

It may be possible that some of us are too anxious to operate, to allow us carefully to examine the ground before hand. We feel a fear lest our case may in some mysterious way disappear, and leave us no opportunity of gaining distinction, and the applause of a wonder-stricken community.

There is not the least doubt existing in our mind, that as we become more and more skilled in the differential diagnosis of these tumors, the results will be far different from those hitherto obtained. The peculiar conditions under which ovariotomy would seem to be advisable are:—

> "1. Continued progress of the disease which threatens danger to life, and yet leaves the hope that the operation will be borne. * * * * *
>
> "2. In exceptional cases, small tumors even may urgently require the operation, when they cause symptoms which are dangerous; for instance, obstinate dropsy, symptoms of impaction, unmanageable ischuria, great tenderness, continued agrypnia, loss of appetite, etc., when these symptoms belong to a disease which permits the operation.
>
> "3. Suitability of the case for operation. The free ovarian tumors, or those fixed by less extensive pathological adhesions, are most suited for the operation. Moderately firm adhesions may be separated successfully; while intimate adhesions of the tumor to the surrounding parts make the operation either impracticable, or the attempt has generally fatal consequences. * * *
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> "4. In simple, or compound cysts nearly allied to the simple, an attempt should previously be made with tapping in all cases.
>
> "5. At the time when the extirpation is performed, the patient must be free from fever, and, if possible, afflicted with no other disease. In this respect, the internal sexual organs are to be examined with care, because it is frequently the case that ovarian diseases are combined with uterine."

It remains, then, for surgeons to diagnose carefully and positively, and for the patient to be laboring under positive danger to life, ere the operation, from the above views, would become justifiable. In addition, the fact must be taken into consideration that ovariotomy, a most formidable operation in its performance, is not the only means offered to the surgeon by which he may give comfort, and even in many cases, comparative health to his patient.

Under the head of *radical* treatment, Prof. Kiwisch gives us tapping; continually keeping open the puncture; injection into the open cyst; incision of the cyst; partial excision of the cyst. Many cases are recorded where, after tapping, the reaccumulation took place very gradually, or not at all. The method of tapping preferred by Kiwisch, as well as Scanzoni, is through the vagina, peritonitis not being liable to follow, as by the growth of the tumor the peritoneum is carried up before it.

The records of this operation are but few. Dr. Clay says :—

> "It is surprising that an operation never hitherto immediately fatal, and so frequently successful, has not been more often practiced, especially conjoined with the injection of a solution of iodine, a mode of treatment which has been rarely attempted."

Scanzoni operated by this method 14 times: 8 cases were cured, in 2 the cysts refilled after a few weeks, 3 did not come again under his notice, and 1 died of typhoid fever two months subsequently.

Tapping through the abdominal walls is rather more dangerous, as the wounding of the peritoneum renders inflammation of that membrane extremely imminent. Another danger is the probable wounding of a large vessel, or, which not seldom occurs, the filling of the cyst with blood, and this internal hemorrhage causes great anæmia, even though it may not immediately jeopard life. The imperfect statistics of these operations will not enable us to do more than hazard a conclusion as to their permanently beneficial results, and we shall therefore pass to the consideration of the method of keeping open the cysts. Though success has resulted from this operation, yet too many objections to it exist to allow of its frequent performance. There is more liability to severe inflammation, and extensive destruction of tissue. Dr. Clay considers that "the success has not been such as to recommend it as an operation for general adoption."

Injections into the sac, especially of stimulating fluids, were at one time highly lauded, but the reports are very unfavorable. The inflammation thus set up may readily get beyond the power of the operator, and a rapidly fatal result ensue.

Incision into the cyst may often become necessary, when, on tapping, the contents of the sac are found to be of a viscid character. Where adhesions do not exist, the walls of the cyst may separate from those of the abdomen, and thus the contents of the tumor pass into the abdominal cavity. To prevent this, it is recommended to produce adhesions at the point of incision by the use of caustics, sutures, or any other means. Various operators have in a variety of ways performed this operation, and—

> "From these trials it may be assumed that incision for the production of a radical cure is far more suitable than the first two methods we have mentioned, because it affords a perfect evacuation, and subsequently a proper discharge of pus and ichorous fluid, and consequently causes the necessary shriveling of

the sac. But it must not be overlooked, that it is always an operation dangerous to life; and it may also be asserted with justice that, as regards its danger, it is not less than that of ovariotomy. In our opinion, therefore, the incision can only have a rational application in those cases in which extirpation is indicated, and which is impracticable in consequence of adhesions."

Lastly, tapping has been combined with internal medication. This has been divided into the constitutional, local, and after-treatment. The first consists of the use of mercurials till the gums are touched, diuretics and tonics, good diet, and exercise in the open air; the second, pressure to the tumor by bandages, thus checking the growth, and afterward, puncture and evacuation; the third, of continued application of a pressure bandage, and persistent medication.

This treatment, however, does not seem to have realized the anticipations of its proposers. "Still, in consequence of the comparatively slight danger attending it, it is worthy of further trial."

Some operators have suggested the excision of a part of the cyst, and the subsequent closure of the abdominal cavity. This seems to be an artificial imitation of the efforts of nature when spontaneous rupture of the cyst occurs. When the fluid of the tumor is not of an irritating nature, this may not produce any bad results, and a radical cure be produced.

The author deduces the following conclusions respecting—

"Internal and surgical treatment of simple ovarian cysts.

"1. There is no internal treatment known from which a radical cure of ovarian cysts may be expected with great probability.

"2. In the few cases in which a perfect cure resulted from internal remedies, the process of cure has remained unknown to us, and no conclusions, as to the treatment of other cases, have hitherto been deduced from them.

"3. The internal therapeutics are, therefore, chiefly symptomatic; and in those cases where a radical treatment is aimed at, it is always to be undertaken experimentally, and must not be carried so far that the patient suffers marked injury from it.

"4. The surgical treatment, apart from extirpation, is also divided into radical and symptomatic. For a radical cure, the vaginal puncture, according to the method taught by us, is particularly suited; and in cases where it is not practicable, the incision of the cyst from the abdominal coverings, particularly when extensive adhesions exist, and at any rate the last-mentioned excision of a part of the cyst wall, present the most proper treatment. But in all these methods of operation, it must not be overlooked that they are not without danger, and, consequently, are only to be performed in urgent cases. As a palliative treatment, abdominal tapping, both on account of its danger and the uncertainty of the relief it affords, should be performed only in dangerous or very distressing cases. In favorable, but at the same time very rare, instances, it may happen that, after its performance, either a perfect cure or a long-continued amelioration may be the result."

In concluding our review of this volume, we would express our satisfaction at the care and labor bestowed by Dr. Clay upon his portion, and especially the tabular arrangement of operations. These present, at a glance, an immense number of cases, with their history, treatment, and results, thus enabling the reader to draw his own inference as to the advisability of operations, without the necessity of groping amid a long and tangled array.

ART. IV.—*Maximen der Kriegsheilkunst.* Von Dr. L. STROMEYER, Kœnigl. Hannov. General-stabartze, etc. etc. etc.

Maxims of Military Surgery. By Dr. L. STROMEYER, Physician of the General Staff of the Royal Hanoverian Army; Commander in the Second Class of the Royal Hanoverian Guelphic Order; Foreign Honorary Member of the Medico-Chirurgical Society of London, and the Chirurgical Society of Paris; Knight of the Royal Prussian Red Eagle, 4th Class, and of the Order of the Royal Saxon Civil Service; Member of the Imperial Russian Academy of Medicine, the Royal Belgian Academy, etc. etc. Hanover: Hahn's Royal Bookstore, 1858. 2 vols. 12mo., pp. 773, and octavo Supplement, 1861, pp. 150.

IT is indeed sad that there should exist motive for fearing a peculiar appropriateness to the study of military surgery in these our hitherto happy United States. Such, however, would seem to be the unfortunate fact. Let us hope that this will speedily cease to be the case. The nation will never be without an army; and there can be no doubt of the necessity, at all times, of cultivating this important branch of medical science.

Dr. Stromeyer had a favorable opportunity of studying large masses of gunshot wounds in Friburg, during the unhappy war of 1848; and was afterward, from 1849 to 1851, physician to the general staff of the army of Schleswig-Holstein. After the termination of the war, he tells us that his first intention was to incorporate the results of his military experience in a volume of his Treatise on Surgery; but that the magnitude and importance of the work and the space it occupied in his mind, compelled him to give it the separate publication which it so obviously requires.

In his introduction, Dr. Stromeyer urges the necessity, in addition to a university course, of an elaborate study of the best practical authors. The individual observations of the military practitioner ought to tend to qualify or confirm some principle; and this can only be done so as to improve the art, when adequate care is taken to become already familiar with the works of those who have gained a high reputation by their previous publications on this subject. He ascribes a just valuation to the labors and experience of Larrey, Guthrie, Hennen, and Langenbeck; and earnestly wishes that those to whom the instruction of medical youth is intrusted would, by every means in their power, promote the study of these authors. It would, he believes, be a valuable service to humanity and science, were some one to compile a fair abstract of all that has been done in this branch of our profession since the invention of gunpowder. In his reflections on this subject, the conscientious author makes some remarks upon certain discussions in the Paris school, at which we were tempted to smile. He prefers the inductions of the above experienced and painstaking men to "the fluctuating Paris manufacture which the discussions (on gunshot wounds) in the Academy of Medicine afford; from which anybody may pick out what he pleases; which, however, shall represent no principle, but merely communicate a mass of partly contradictory, individual views." It is not improbable that, in countries where the government recognizes the value of the medical profession, protects its practitioners, and grants emoluments and honors to those who are eminently useful to mankind, the necessity of mutual support, by deference to the opinions and feelings of a competitor, may be less keenly felt than among the Anglo-Saxons of perhaps either side of the water. In a land where acts of incorporation are not given to homœopathians, eclectics in a sense very different from the historic, and female colleges, it may be so. Certain it is, that the writings of Dr. Stromeyer are eminently characterized by a truly German love of truth, and by a desire for public utility. The position of the military surgeon renders it scarcely possible to extend the science of war-surgery, unless he is placed in a hospital station. During a long peace, too, the impressions on the memory are weakened, and partially superseded by more recent occurrences. Dr. Stromeyer does ample justice to the ardent aspirations, so often cruelly disappointed, with which many young men enter the medical service of armies; but it is the duty of a philosopher and a man of business to contemplate things as they are, and to labor after, not what is best in the abstract, but what is obligatory and most useful in the existing state of things. The character of the experience gained, too, varies excessively; and examples are seen of army surgeons who have neglected to practice attendance on the wounded, and have first become familiar with bandaging on an actual field of battle.

In regard to their qualifications for this service, physicians fall into the following classes:—

1. Such as, by the variety of their talents, by their character, their experience in service, and their vigorous health, are competent to every duty.

2. Such as, by their vigorous health, by peculiar adroitness in their intercourse with officers and men, are peculiarly qualified for service among marching troops.

3. Such as are peculiarly qualified for the treatment of in and out patients of hospitals.

4. Such as, from possessing the character of experienced surgeons and operators, are peculiarly qualified for the service of ambulances.

5. Those, whom a peculiar fitness for and inclination to administration, point out for the management of muster-rolls and accounts. A well-organized army develops these men; but in a newly-raised body they belong to the exceptions.

6. Those, in fine, who should be got rid of as speedily as possible, as they do no particular honor to their station. On account of such individuals as these, where sudden and large augmentations are made in the numbers of the military medical body, the appointments may be made provisionally.

These qualifications, says Dr. Stromeyer, cannot remain long concealed from an observing chief; and form, in his opinion, a much better basis for appointments in war than the over-estimated rolls of seniority. The latter consideration, when compared with fitness, should, in our author's opinion, be disregarded.

The author believes that in the north of Germany the service has been improved by the decay of the special schools for military medicine, and the assumption of competent men from the universities.

These considerations of the qualifications of surgeons, though an important special subject, are included by our author in his introduction. To do justice to his learned and experienced inquiries in a review is impossible: they are strongly characterized by terseness. We will, however, sketch the arrangement of his work.

The appointment of army physicians,—(we dislike the servility of employing the French word personnel,) — that of apothecaries, the equipment of the health establishment, the hospitals, the ambulances, the general regulations and instructions, and the mode of drawing up reports,—these occupy forty-five pages, constituting the already-mentioned introduction. If we could use the freedom, we would say, that it is a very important section, but does not introduce anything.

The first section ensuing is on wounds in general, and almost exclusively on gunshot wounds; the next, on the general course of the symptoms of them; then one on the treatment of wounds on the field of battle; then a special article, of moderate length, on bandages and other dressings. Twenty pages are enough for the treatment in hospitals.

The second volume is on particular injuries. First, on an account of injuries of the head from gunshot wounds; then an elaborate analysis of the symptoms which may ensue from them; then follow with rapidity injuries of the face and neck. Thirty-three pages are given to the thorax; and then follow, in a somewhat abridged form, injuries of the abdomen, pelvis, spine, and upper and lower limbs; three pages on artificial limbs; and then a table of injuries of bones of the extremities; and one, of the number of persons invalided for wounds.

The Supplement contains the principal additions made in the second edition of 1861, here furnished along with the first. Its articles relate to the construction and management of barracks, the treatment of the principal diseases of soldiers, an extremely neat series of wood-cuts of morbid specimens, and a translation of the British regulations to reform the army medical department.

As our space is limited, we shall be obliged to make selections; and we fear doing so without adequate means of discrimination; but, as the Supplement possesses the advantage of bearing a more recent date—that of the present year, 1861—and as the labors of Dr. Stromeyer are never deprived of their just circulation, but always enter into the science of the time, we shall give the preference to this latter volume.

Regulation of barracks.—No barracks, however roomy, can dispense with ventilation; they will inevitably become unhealthy if deprived of it; and the most important of the injurious results in the Schleswig-Holstein war were the formidable pestilences of typhus fever and granular ophthalmia. Yet ventilation, at last, can only in part make up for the want of sufficient breathing space within the chambers; and rooms positively overcrowded will be injurious to health, although with the most perfect arrangements of this kind. Even under the open sky, the assemblage of vast masses of men is found to generate disease.

In the best barracks of the Schleswig-Holstein infantry, 700 cubic feet per man were provided, including the double purpose of residence and sleep; and it was not difficult to obtain 800, on the occasional appearance of granular ophthalmia. In the English regulations of 1859, 600 are established by government. It is of great importance to have the sleeping and the sitting rooms separate, so as to subject the bedding to currents of air. A high, dry, well-drained situation is required, without hollows that can contain water, without mud, and protected from the drainage of neighboring grounds. Abundance of good drinking water must be accessible.

The size of the grounds will depend on the situation; but it is the more important as impediment to ventilation exists. A southern exposure, admitting of a majority of the windows in that side, is the best; next to this, a southeastern. It will be recollected that the ocean lies on a different side from that which it occupies in the United States. Taste should never be allowed to interfere with this. The barracks should include no hollow square, or much-projecting wings—never to exceed a projection of 25 feet; 500 feet should be allowed for the sleeping-rooms, and 300 for the day-rooms; with large communicating openings near the ceiling, closed with Venetian blinds, to be left open in summer, after airing the day-rooms. All the rooms should be on the southerly side, with the corridor on the north. The windows of the corridor must be opposite the doors of the rooms, which should be folding-doors. The utmost deviation from these rules which can be permitted is the construction of two short wings to contain small chambers. For economy, the chambers should be made somewhat deep from north to south, and proportionably narrower in the other direction.

Old Philadelphia readers will be reminded by most of these instructions of the admirably-constructed Bush Hill Yellow Fever Hospital, now removed for the erection of dwelling-houses. The city owed this to the science and care of a commisssion of physicians; principally, we believe, to the labors of Dr. Samuel Powell Griffitts. As far as we are informed, we believe that no epidemic ever prevailed there, except occasionally a little intermittent fever at its western end.

The whole building should, for the sake of health, be made with deep cellars. This differs from some English and American authorities. If a perfect drainage be accessible, the washing-rooms should be placed there; if not, in the small projecting wings at the end, which should have solid floors, without cellars, and be themselves well drained. The bath-rooms should have hot water from the kitchen. The privies should be separate from the urinary funnels; and both remote from the dwelling-house. A stream of water should run through the bottom of the urinary conveniences. The apothecaries' shops must have good light, and a surface of at least 350 square feet.

Large buildings have recently been erected in Hanover, in accordance with these rules; and supplied with a parade ground of fifty acres.

Hospitals for peace.—Dr. Stromeyer frankly expresses the conviction, that the proper erection of these is the most difficult task of an architect. *It cannot be done without the advice of physicians;* and, as these are not specially instructed on the subject, and have rarely given it any particular attention, they are imperfectly qualified, and are obliged to instruct themselves as they go, to the great detriment of the service proposed.

It is not, certainly, the City of Philadelphia that has a right to upbraid another country than its own for inadequate investigation previously to building hospitals. The expensive erections which surround us, some of them costing enormous sums, have in some instances been produced in the manner which Professor Von Stromeyer considers impossible, without medical advice, or at least in defiance of it, and by the judgment of citizens engaged in other professions. In some instances, costly and splendid structures, now and for years without a patient, have been said, upon the highest authority, to have been built without inspecting elaborate reports which had occupied the time and industry of commissioners composed of medical men of standing.

Philadelphia, it is well to understand, however, is not without evidences of a proper influence exercised in the task of hospital building by those adequately qualified to give advice and superintendence. We have already mentioned Bush Hill. Dr. Rush's discourse on this subject, in his Sixteen Lectures, was written at the request of an active manager; and, at the time when that celebrated physician exercised the greatest influence on men's minds, served very extensively to diffuse a recollection of this important subject among the medical men of our country. The Lazaretto is well constructed; and was, we believe, made so with medical assistance. It was at a time when the terrors of the yellow pestilence were recent in men's memories, and a deep anxiety was generally felt for the mixed benefit of science and experience. The Naval Asylum, certainly a very fine and well-arranged establishment, enjoyed the services of an able medical staff. The military guard kept at Philadelphia has not yet, we believe, been thought large enough to require a considerable hospital building; but no one will question either the ability of the faculty, or their proper influence in this important duty.

Dr. Stromeyer is of opinion that the construction and management of hospitals should be regularly taught in universities by public courses, for the information of the young men in pursuit of medical honors; and that governments would then never experience any difficulty in selecting persons properly qualified to discharge these important duties.

In constructing military hospitals, part of the trouble is saved by the avoidance of the necessity of providing for both sexes. The idea has been relinquished, that it was desirable to assemble great numbers of patients with the same complaints in large wards; those more recently prepared not containing, in general, more than a dozen beds. This Dr. Stromeyer prefers, conceiving that the object of classification requires smaller rooms. In the General Hospital, at Hanover, there are rooms of three sizes; thirteen that contain sixteen beds each, sixteen for four beds, and eleven provided with only one or two a piece. It is difficult to estimate with confidence the relative proportions of mild cases and of the severe ones which any hospital is likely to receive; but by ascertaining the facts from similar institutions, it is not impossible to approximate to this result. The milder cases, for convenience, should be grouped in the larger rooms; but smaller ones are indispensable, from the necessity of separating the severe cases, and frequently of insulating them. The motives for this will sufficiently suggest themselves: silence; freedom from interruption; the necessity of peculiar cares, sometimes unpleasant to others; a peculiar state of the atmosphere, and of light; and lastly, the presence of those very ill or dying, with all the injurious effects upon the minds of those who are ill themselves, and often in a situation really, or in imagination, similar. Dr. Stromeyer hence finds it necessary to intersperse the large wards with a sufficient number of smaller rooms to answer these purposes. Some changes which have been made in our city, of smaller rooms into larger ones, and at considerable expense, will not seem to correspond with the conclusions of this eminently practical writer.

Hospitals are built two or three stories high from motives of economy. This Dr. Stromeyer defends; and directly opposes himself to the justly celebrated Miss Nightingale. His hospital, including a basement, is four stories high. His displeasure with this lady seems to us to be rather too vehement, and to have caught from her a little of that impassioned fervor for which he blames her. In his opinion, the rise of effluvia from one floor to those above it, is in no degree to be feared, if simply each different story is properly ventilated. The construction advocated by Miss Nightingale is, in his eyes, sufficiently objectionable from its nearly doubling the cost of erection. In addition to this, he conceives physicians called upon to oppose it, because, as he says, it excludes the use of smaller individual rooms for separating patients, as we have above described. According to him, this plan would compose the whole hospital of nothing but a series of buildings, each containing two wards, one above the other, and only communicating by open arcades. We have not the book at hand; but our recollections from the perusal of it have not left so strong an impression on our mind. We cannot see, amid Miss Nightingale's arcades, and her architecture so far too liberal in its expenditure, why there should be any difficulty in constructing the separate rooms required. This benevolent and distinguished individual has exerted herself, certainly with great warmth and energy, to procure more adequate accommodations for prolonging and saving the lives of the British soldiery; and it is difficult for us to think that she, or those whom she advises, would refuse to let them benefit by the experienced suggestions of Professor Stromeyer. If governments will not furnish the money, the objection is conclusive; but they certainly do, in some instances, squander a great deal that had been better spared. Dare we ask whether Dr. Stromeyer has forgotten two considerations which we shall cite? One is, that statistics have shown, as in the case of the hospitals of Paris toward the end of the reign of the first Napoleon, that the mortality of the second story of these establishments is greater, de facto, than that of the first. The tendency of the warm effluvia of an inhabited house to rise upward is a constant agency, perpetually in action; and the time allowed by any incompleteness, imperfection, forgetfulness, or delay, is never wasted by that unfailing power of nature, the difference in specific gravity. If the ventilation of all the stories be absolutely perfect, and there be no staircase or other means of communication, the rise of effluvia within the house might be prevented. Even then it will take place to a sensible extent up the outside walls of the building. Professor Stromeyer shows how a current can be sent through lower openings on the north and cooler side, and more elevated passages in the southern and heated surface. But the operation of these processes is not perfect; nor can any attendance to close doors be safely calculated on as such. *Quis custodiet custodes?* Why place human subjects in a situation where the evil is certain and unremitting, and the protection liable to imperfections and exceptions?

The other objection which we beg leave to state, is that the climates of which the learned professor and the benevolent lady write, are essentially so different. They both censure the practical evils which they respectively saw; and it appears to us quite reasonable to suppose that the rapid chemical changes of the vicinity of Constantinople, the habitual exposure of large masses of putrid matter, and the neglect of drainage, required a far greater volume of fresh air to neutralize their destructive effects than the corresponding circumstances in such a country as Hanover.

Air-heating furnaces, in the opinion of Professor Stromeyer, are only suited for sick chambers. Ventilating draught tubes, terminating in chimneys, or above the top of the roof, are of much service. They can produce a sensible freshness in the air of the smallest chambers, and readily supply abundant air to patients with diseases of the eyes without making the room brighter.

Several other mechanical details, of real value, are given; but we are obliged to omit them for want of space.

The results of careful experience in the general hospital are given to us in a medical report, which fills sixty-nine pages of the volume; and from which we extract the following matter. The observations embrace the last ten years. Nearly 10,000 troops were posted in the capital during that time; a few cases of the worse class were sent there from other military points, and some civil cases admitted. The number of deaths among the troops averaged but $5\frac{2}{10}$ in the thousand; while that of male individuals of the same age in the whole kingdom amounted to $9\frac{5}{10}$ in the same number, and, in the capital, to 10; thus proving that the preservation of life was better among the troops than among the citizens. The situation of the capital city was not thought one of the most desirable in respect to health. The cases in the hospital from 1854 to 1859, inclusive, and in the last four months of 1853, were so selected or intercepted as to amount to the exact number of 10,000. Of the 242 cases of inflammation of the lungs, no death is acknowledged; of 60 of consumption, 30, or one-half; of typhus, 18 in 225, equal to 7·2 per cent. The following are set down without a single death: catarrh of lungs, stomach, and bladder, 1120; abscess, 332; pharyngitis, 566; undeveloped diseases, 1819; measles, 45; syphilis, 371; intermittent fever, 771. We make the total of these last 5024.

The professor sums up the general impressions which his observations have left on his mind in the following dogmas or propositions, which he submits with great modesty to criticism. The degree of correspondence which may exist between this Ideal and the Habitual, in the practice under his superintendence, he refers to his accounts of particular diseases. These form a most valuable mass, the thorough study of which is desirable to any man; but to which our limits, were it not for our doubtful competency, render it impossible to do justice. As, however, they bear the more recent date, 1861, partial abstracts from them will probably fill the greater part of our remaining pages.

1. The healing art is founded upon the natural history of disease. A good therapeutic method must follow the physiological processes which are disordered in the patient. This includes injuries which are the subject of surgery, and also poisoning.

2. There are no specific remedies. All that appear such should be explained physiologically.

3. Regulation of the mode of life of the patient is the most important problem which is laid before the physician, as it relates to the action of all the stimuli which support and modify life. This is equivalent to diet, in the original Hippocratic sense. (*Foes, sub verbo.*)

4. Medicine should never be given till the mode of life is previously regulated. To practice medicine in foul air, or during the use of improper food, is like making chemical investigations with impure reagents.

5. Drugs should be given when they are necessary or *euphemistic*, and when they are indicated. By the word which we have expressed in italics, we presume that the author means in good repute.

6. A good medicine must be one which will never add to any of the detriments to which the patient is liable to suffer in the course of the disease. Such a remedy should be considered faulty or imperfect.

7. The natural history of the disease includes the ground-work of its existence; and this leads to the most noble problem submitted to physicians—the prevention of disease.

Military physicians are more frequently than others in a position to render services of this kind.

"These maxims," says our author, "characterize the true physician; and the reverse of them, the quack. Let them be to us words of counsel, beloved as the beautiful constellations that guide the ship through the ocean."

The first article of Surgeon-General Stromeyer's pathological report is a note on acute exanthemata. Of these, in his one thousand cases, there are forty-six of scarlatina, forty-five of measles, and four of windpock. We suppose that this last affection would here be called a mild varioloid. It is not in our dictionaries, but in Van Swieten, v. 10. There was no small-pox; "an immunity," says our author, "beyond doubt to be ascribed to the abundant revaccination of the recruits;" a fact worth copying in our newspapers, to nullify the clamor sometimes raised by unprincipled or ignorant persons. The small-pox constantly prevailed in the city; and in the army, out of one thousand revaccinations, thirty-eight, on an average, were successful. The scarlatina cases were distributed throughout six years; of the measle cases forty-one in forty-five occurred in one year. The patients affected with measles or scarlatina were not removed to the insulated house for contagious cases, but merely placed in separate chambers. To the effects of good ventilation (added to general good management) Dr. Stromeyer is inclined to ascribe the fact that no contagious case, no morbid sequelæ, and no death from these cases occurred in all that time. The pulse, in the scarlatina cases, never exceeded eighty in the minute!

Rheumatism.—It is difficult justly to divide the cases into acute febrile and non-febrile; the state of the weather having so much influence on this point, that observation continued for some time is necessary for the discrimination. They fall more naturally into the three following classes:—

1. General acute rheumatism of joints.
2. Local rheumatism of joints.
3. Painful rheumatoid condition, without deposits capable of being pointed out.

General acute rheumatism of joints declares itself immediately after exposure. After a severe chill on guard, or after a forced march, fever and swelling of the joints come on so rapidly that the subject must be sent immediately to the hospital. The fever is absent in but few cases. Generally the ankles and knees are affected: one knee more severely than the other. The inflammatory process seldom subsides rapidly; but the disease is further developed. The finger-joints, wrists, and elbows are soon seized; but prior to this, Dr. Stromeyer has found, as the rule, that infiltration has taken place in the lungs; the physical signs of which, in general, rise higher on one side than the other, and in some instances as high as the shoulder-blades; the indication being obtained by percussion. A fine mucous rattle is generally present; but not in every instance; rarely cough or dyspnœa. The affection of the heart does not accompany these; but follows the extension of the disease from the arms. It cannot, therefore, arise from the prone position of the patient. Undoubtedly there are exceptions to this order of succession; and he has even seen cases of endocarditis and pericarditis in which no signs of the rheumatic process had made their appearance.

When cases are daily examined with care, the first evidence of diseased heart is a change of the rhythm of the organ's motions from a prolongation of the first tone. Here the affection often stops; but if it be further developed, the endocardial rustling is heard. In patients treated early and promptly, as Stromeyer's generally are, pericarditis rarely ensues; and not till there is previously well-marked endocarditis. In the majority of cases, one joint is more severely affected than the others throughout. Leeches give much more relief than bleeding. It consequently almost appears as if the inflammatory status of a part operated to derange the composition of the blood; and, probably by increasing the development of fibrin, gave room for the development of the rheumatic process. It is twenty years since our author proclaimed that the augmentation of fibrin in the blood, during the phlegmasiæ, was not the cause, but the consequence, of the inflammatory process, and stood in connection with the impediment to the circulation in the inflamed part, and with the increased development of heat. It is a circumstance instructive in this respect, that the augmentation of fibrin in the blood is often wanting in inflammatory affections of organs of small size, as these cannot essentially change the whole mass of the blood.

Affections of the brain never appeared among Dr. Stromeyer's cases. But a single death of a rheumatic patient occurred in the whole number of five hundred and thirty-two instances of rheumatism; and this, before his service commenced. His accumulations of facts, therefore, on this point terminated with observing the phenomena of endocarditis by the sick-bed, and generally with friction sounds and effusion, without the unhappy advantages of dissection.

Treatment.—In his experience the cool treatment of rheumatism proved itself the most important principle of cure. Patients became worse, or were delayed in their recovery, in exact proportion to their proximity to the stove. He was, by his success, gradually led to abolish the customary load of bedclothes; and, in summer, even to cover his patients with nothing but a linen sheet, unless, indeed, they asked for a blanket. This procedure had the happiest influence. Until he adopted it, he had frequently the regret to see patients, who were admitted for a simple affection of one joint, become gradually involved, under every medication, in a general rheumatism accompanied by fever. This afterward entirely ceased to be the case; and the removal of rheumatic subjects to a cool room became established in the hospital as a useful resource. In the same manner cases were more successfully treated in winter.

Dr. Stromeyer has entirely relinquished general bleeding; not from the production of an inconvenient debility by that means, but from observing its little utility. Leeches were found more useful than cups, from the long continuance of the bleeding they produce. Still, he is far from wishing to restrict the use of cups. To keep up the oozing of blood from the leech-bites, sponges were not so successful as wet compresses. The former insinuated their fibres into the bites and produced little abscesses, accompanied with considerable increase of the existing pain. "It was easy to be deceived as to the cause of this increase; and equally so to make it suddenly cease, when, by the application of warm cataplasms, the little abscesses were made to empty themselves." We would ask, how long the sponges were kept applied? and, if we could make so free with this eminent teacher and administrator, whether he had forgotten that simple cataplasms would relieve rheumatic pain?

Leeches should be applied to the region of the heart as soon as the physical signs of endocarditis appear, without waiting for the occurrence of pain, as some high authorities have advised. Pain in that region indicates too advanced a stage of pericarditis to be waited for.

Dr. Stromeyer believes opium the only intrinsically effective internal medicine for rheumatism; and conceives that, in regard to the employment of any other drug in the case, the question really is merely how to prepare, or keep prepared, the patient for the use of this crowning remedy. This is to be performed by diminishing the distention of the blood-vessels, and by attention to the bowels. He reduces the force of the pulse with nitrate and bicarbonate of soda, and, if the tongue be then moist and clean, immediately administers opium.

Against the derangements of the stomach, by which the effect of morphia is interfered with, he has relinquished altogether the use of antimoniated tartar. If a deposit begin to form on the tongue, the nitrate of soda is laid aside, phosphoric acid given, and the use of the morphia intermitted, until the tongue again becomes clean and moist. To avoid disappointing patients of their beloved "sleeping powder," they are furnished with pulvis sacchari.

Dr. Stromeyer has also given morphia in endocarditis and pericarditis, according to the method of Dr. Billing, of London, but not in equally large doses; not deeming it necessary, and being "perhaps" led by the preceding cautions. A quarter of a grain once a day is generally sufficient; sometimes this being given twice in the same period, but very rarely more frequently. Digitalis is greatly inferior, does not relieve the pain, and disturbs the stomach. Castor-oil is used to regulate the bowels; and the diet adjusted according to the pulse. By the cool treatment the profuse sweats are avoided. These he hopes "none will, at the present day, consider critical." Strong sudorifics should be entirely discarded, more especially during acute affections of the heart; a state of things which it is not easy to alleviate with leeches and morphia. Calomel was given for this object, in the dose of one grain every two hours; but seldom to a larger amount than twelve such doses.

By this treatment all his patients recovered; the heart symptoms ceasing, except a few cases, in which a slight systolic rustle could be discovered, when they were discharged.

Local rheumatism of joints.—These cases almost always have the form of inflammation of the synovial membrane, or dropsy of the joint; unless they are relapses or second or later attacks in the same joint. They have generally the appearance of injury of joints from gymnastic exercises. They occur commonly in the knee. Sometimes the inflammation is very severe, and requires repeated local bleedings, the application of ice, and the use of mercury to a considerable extent. Against the more chronic form the principal resources were fomentations with vinegar and water, and sometimes blisters. The use of morphia for pain and to procure sleep should not be omitted. In all rheumatic affections of joints great care is called for to obtain and preserve proper attitudes for the diseased member.

The condition of "being rheumatic."—The pains and impediments to motion, which appear under the form of muscular rheumatism of single joints, or of the thorax, or in that of lumbago or sciatica, were more generally reflex phenomena from the large bowels, which were at the time laboring under a catarrhal affection, and loaded with masses of hardened fæces. (We should probably call it colic from cold.) Hard masses were felt on palpation of the surface of the abdomen, and the patients were relieved when these were evacuated. This, however, was not always the case; and the exceptions were mostly treated with a little morphia and by warm fomentations with cloths wet with decoction of flax-seed; cups and blisters being seldom needed. Sometimes warm baths were used; and, in a few obstinate cases, iodide of potassium, oil of turpentine, or corrosive sublimate.

The good effects of colchicum appeared to him to be owing partly to its combination with opium, partly to its purgative operation. When this last depended on the colchicum itself, the operation amounted, in some cases, to a poisonous one. He therefore considered the plant an unsafe medicine.

Rheumatism of the muscles of the neck, the simplest form of that rheumatism which arises from the action of the nerves of the skin, never appeared among his soldiers.

With this we are compelled by our limits to close the very partial analysis which we commenced on the valuable and eminently practical work of this distinguished physician. It would be a grievous loss to the Anglo-American profession were it not to be translated. It would give us great pleasure and render a substantial service to our readers to carry our review through the remainder both of the present volume and of the two earlier ones. Whether this will be done or not, will depend upon the convenience of this journal.

ART. V.—*The Surgical Diseases of Children.* By J. COOPER FORSTER, Fellow of the Royal College of Surgeons, Surgeon to the Royal Infirmary for Children, etc. London: John W. Parker & Son, 1860. 8vo., pp. 348.

So marked a difference, in many points both of anatomy and physiology, exists between childhood and adult age, that, although the same laws are in force throughout both periods, their operation is necessarily modified with the physical changes undergone by the individual. In the child, the nervous system is highly impressible, the nutritive processes are actively carried on, the skeleton is in a transitional state, the sexual organs are undeveloped. After the second of the great changes which affect both sexes alike, adolescence establishes a much more even balance between the several constituent systems of the body; and the progress of their maturation is from that time more steady, uniform, and equable.

Previous to puberty, therefore, not only are some affections met with from which adults are more or less completely exempt, but those injuries and diseases which are common to all periods of life are modified, in their symptoms, course, diagnosis, prognosis, and in the treatment demanded, by the peculiarities of childhood. The existence of such works as those of Barthez and Rilliet, Evanson and Maunsell, Condie, Meigs, West, Underwood, and others, shows the extent and importance of the medical branch of practice among children; and we think that almost every one must have felt from time to time the want of a corresponding literature in the department of surgery. It is true, that in most of the systematic treatises on general surgery much of the matter appropriate to such a book as that before us may be found, but it is there introduced incidentally. An examination of several such works, of deservedly high rank, has impressed us with surprise at the degree to which these very important topics are neglected; the operations practiced on children are described and explained, but the antecedent and more scientific subjects we have alluded to are passed over almost in silence.

So far as we are aware, this volume of Mr. Forster's is the first essay at filling up the before-mentioned gap in surgical literature. His extensive experience at the Royal Infirmary for Sick Children, as well as that world-renowned institution, Guy's Hospital, must give his views a large share of authority; more than three hundred children, we are told, are annually admitted into the surgical wards of the latter charity alone. In his preface, Mr. Forster states that his work is based entirely upon his own observations, and that it is wholly original; he also says that brevity has been a constant object with him. Let us remark here, that in the excess of these virtues we find the only faults of his book. Had he extended his limits so as to embrace the literature of his subject, the various theories, plans of treatment, etc., defended by other writers, and confined himself less rigorously to the task of producing as short a book as possible, we think he would have done better both by himself and by his readers. At the same time, we think that Mr. Forster has done a most important work, not only in opening a new field, but in publishing the results of his labors; and we are disposed to receive his contribution most thankfully.

No branch of surgery has been more benefited by the introduction of anæsthetics, than that now in question. A crying, struggling child presents a most difficult subject either for examination or operation, to say nothing of the after effects, physical and moral, of the contest. Chloroform is safely employed in children, unless some organic disease of the brain, heart, or lungs is present. Mr. Forster thinks local anæsthesia, by means of freezing mixtures, more useful in the later years of childhood than in infancy; and even then it acts but superficially.

In speaking of hare-lip, Mr. Forster gives a very clear description of the operation, which he thinks should be performed as early as possible, in order to facilitate sucking. He very properly prefers the knife to the scissors; but we have found it more convenient to employ a small spade-shaped wooden spatula to cut down upon, than to trust to forceps for confining the edge of the fissure. A pair of wooden forceps with one broad blade might be used with advantage. Mr. Forster also advocates the continued suture for keeping the pared edges together, alleging that it leaves less of a mark than pins do; we have always been disposed to prefer the quilled suture to any other means of coaptation, from the fact of the general support it gives to the tissues. A very fine wire may be used to make the points with, and the marks thus left can hardly be more observable than those from the continued suture.

Passing on to Chapter V., on affections of the pharynx and œsophagus, we find a most interesting case related, in which gastrotomy was resorted to for the relief of contraction of the œsophagus from corrosive poison. A boy four years and four months of age came under Dr. Addison's care at Guy's Hospital, having swallowed, seventeen weeks previously, what was supposed to have been a solution of potash. Fifteen weeks after the accident, after having been free from symptoms for more than three months, he began again to suffer from dysphagia, and at the time of his admission was quite low from want of nourishment. Nine days later, the case being desperate, an incision two inches long was made in the left hypochondriac region, an opening effected in the stomach, and the edges secured by the continued suture to part of the parietal wound; the rest of the latter orifice was closed by the same means. A large vessel in the wall of the stomach was divided, and both ends of it had to be tied. Chloroform was used to produce anæsthesia. Food was immediately given by the gastric fistula, and the child got along very well for nearly three days, when he suddenly complained of great abdominal pain, became collapsed, and died in four hours. At the autopsy, the peritonitis (to which death was evidently due) was found to have arisen from the giving way of some of the sutures, and the consequent escape of food into the peritoneal cavity. An excellent wood-cut shows the post-mortem appearance of the body.

Mr. Forster passes over intestinal obstructions in silence; but we think that the above case would have justified him in speaking of them, and in recommending what we should certainly propose where any clue was afforded to the seat of the difficulty—an operation analogous to the above. If death is inevitable, which in such cases may often be asserted, the results of observation of wounds of the abdomen would warrant us in proceeding, at once, boldly, but cautiously, to attempt relief by gastrotomy, as the sole though desperate resource of art.

In Chapter VII., on diseases of the trunk, we notice some interesting remarks on vascular growths from the umbilicus, as well as on fæcal fistules at this point. The treatment in the former affection consists simply in ligation; in the latter, in paring the edges of the opening, and bringing them together by a hare-lip or quilled suture.

Vesical calculus, so common in boys, is of very rare occurrence in female children. In the former, Mr. Forster prefers lithotomy, by the ordinary lateral method; dwelling particularly on the importance, on account of the smallness of the prostate at this period of life, of tearing rather than cutting that organ. Hemorrhage of any moment he has never met with in this operation, except in boys near puberty, and in such cases he would defer surgical interference until the organs were fully developed. The best treatment in the case of girls is by lithotrity, unless the stone be very hard; and then a combination of dilatation of the urethra with incision of the neck of the bladder may be resorted to.

The subject of nævus occupies two chapters of Mr. Forster's book; and is illustrated by a number of very excellent colored lithographs. Formations of this kind are classified as cutaneous, subcutaneous, and mixed; they are defined as growths similar in structure to erectile tumors, but "not endowed with the power of filling themselves with blood." To this latter statement we take exception; no part has the power of filling itself with blood, unless it is in some way susceptible of special stimulation, like the nipple or the penis. Nævi do not, so far as we know, contain nerve-fibres, or any active tissue-element; they become the seat of passive congestion only, when the adjacent parts are distended with blood, as when a child cries violently. Mr. Forster looks upon the ligature as the best and surest mode of treatment for nævus, except when the disease is wholly subcutaneous, in which case he always resorts to the injection of a solution of the perchloride of iron. He remarks that many small nævi may be tied very tightly, the pins used for transfixion removed at once, and the ligature in a few hours afterward, with perfect success; in larger growths of the kind, however, it is necessary to maintain the constriction until sloughing has begun. The various other plans of treatment which have been proposed are fully discussed—excision, pressure, ligation of vessels of supply, vaccination, irritant and escharotic applications, introduction of caustic, seton, actual cautery, needles and twisted sutures; of all these, not one is adapted to any large number of cases. Vaccination may be very advantageously used in small nævi on very young children, but we have never seen it succeed under any other conditions.

In view of the very great importance and interest of the subject of injuries and diseases of the bones and joints in children, we think Mr. Forster has left a vast deal unsaid which his experience must have taught him in regard to these affections. As to fractures and dislocations occurring in children, they differ from those in adults mainly in their therapeutics; and every surgeon who has much to do with children acquires "wrinkles," as the boys say, which would be of service if communicated to the profession. The slight purchase which short and small limbs afford for a confining apparatus, the extreme restlessness so common in early life, and the eel-like facility with which our little patients so often contrive to worm themselves out of what seems at first to be an efficient dressing, make it extremely desirable that the best plans of treatment devised should be generally known.

Upon the diseases of these organs, our author has spoken somewhat more fully. He advocates entire rest in coxalgia, of which he gives several interesting cases, and speaks also of the value of tonics; but he does not seem to us to say enough of gentle purgation, which we think an important element of the treatment. In this connection we cannot help alluding to a case under our charge four or five years ago, in which a girl about seven years old had had all the symptoms of the disease, gradually increasing in severity for more than a year. All attempts at confining her limb were futile, and we had to be content with the steady employment of tonic and laxative medicines; under which she recovered so entirely as to retain only a slight limp in walking or running.

Resection of the head of the femur does not seem to Mr. Forster to satisfy the expectations which its theoretical consideration would excite; and such would seem to be the legitimate conclusion from the few experiments with it which have as yet been made in this country.

In speaking of foreign bodies in the ear, Mr. Forster says:—

> "The more the meatus is pulled about by instruments, the less likely is the removal of the foreign body to be effected. Syringing with warm water is therefore the practice to be adopted. When the foreign body has been thus destroyed, the end of a curette may be sometimes useful to remove it from the orifice; but even then any attempts which give pain to the patient should be at once discontinued. Repeated syringing may be required, as no force should be used, even if unsuccessful in the first or second attempts at extraction. If the foreign body cannot be removed by syringing, which, unless there has been previous injudicious interference, is seldom the case, it should be left to ulcerate its way out."

Although deprecating the use of any unnecessary force, we are sure that the best practice in such a case would be to persevere in the use of instruments, drilling or breaking up the foreign body. About two years since we were called to see a boy six or seven years old, who had had a piece of slate-pencil, five-eighths of an inch long, forced into the meatus by a schoolmate; and so firmly imbedded was it across the upper end of the channel, as to be entirely immovable. Feeling sure that if allowed to remain it would cause inflammation, and perhaps the total loss of hearing, we administered ether, and then, with a strong probe curved at the end, pried the piece of pencil into the axis of the meatus, so that it could be removed with forceps. The change of position was not effected without the exercise of very great force, but no unpleasant symptom followed, and in a few days the boy was quite well. In such a case as this it would be manifestly absurd to rely upon syringing the meatus, and equally improper to leave a hard mass resting in close proximity to the membrana tympani; so that, had any greater force been necessary for its dislodgement, we would have proceeded to attempt breaking it up, by drilling it with a dentist's file.

When speaking of spina bifida, Mr. Forster discourages surgical interference, whether by incision, ligature, or injection; recommending simply mechanical support of the tumor. The other malformations usually met with in children at birth, club-foot, imperforate anus, etc., are quite summarily dismissed.

A few words on tetanus, and a section on burns and scalds, conclude this volume. The former affection, the details of several cases of which are given, Mr. Forster thinks is not always consequent upon, but may be merely coincident with the wounds which are supposed to give rise to it. He would treat it by means of anæsthesia, anodynes, support, and wine. For burns and scalds he recommends the use in the first place of raw cotton, and subsequently of ointments, such as that of the oxide of zinc, or resin cerate. Raw cotton is undoubtedly a very comforting application in these cases, where the cuticle has not been destroyed; but for seven or eight years past we have preferred fresh lard, thickened if necessary with simple cerate, to every other form of dressing for burns. We speak advisedly when we say, that we have substituted this for other remedies in hundreds of cases, and never yet knew it to fail in quieting pain and promoting the healing process. Its advantages we believe to consist in its unirritating nature, and in the complete protection it affords from the air.

We have now passed in review the most important of the doctrines inculcated in Mr. Forster's book. Its meagerness, as we have said, is its only fault in our eyes; and this we attribute partly to the author's modesty and partly to his desire to write strictly from his own observation. We should be glad to find his next edition, which, we trust, may soon be called for, augmented to three or four times the size of this, and furnished with his views, in full, on many subjects which he has now passed over hastily. A man with his practical tendencies, clear head, and abundant experience, may write at length without fearing the charge of diffuseness; and we would remind him that no man can take up any special department in medicine or surgery without going over ground already in a manner covered by general treatises.

Unusual liberality has been displayed by Messrs. Parker & Son in the getting up of this very handsome volume. Both its illustrations and its letter-press are exquisite, and its typography is altogether correct.

Art. VI.—*On the Reparative Process in the Human Tendons after Subcutaneous Division for the Cure of Deformities; with an account of the appearances presented in fifteen post-mortem examinations in the human subject; also a series of experiments on rabbits, and a resumé of the English and foreign literature of the subject.* Illustrated by Seven Lithograph Plates and a Series of Wood-cuts. By William Adams, F.R.C.S., Surgeon to the Royal Orthopedic and Great Northern Hospitals; Lecturer on Surgery at the Grosvenor Place School of Medicine; late Demonstrator of Morbid Anatomy at St. Thomas's Hospital. Churchill: London, 1860. pp. 175.

We are under obligations to the author of this work for a personal compliment. It is not necessary, however, that a feeling of friendship should interfere to make men praise him; his labors have already sufficiently achieved that object, and we are merely serving mankind in the regular discharge of our duty.

Mr. Adams believes he has established the following propositions:—

> "1. That tendon is one of the few structures of the body, such as bone, cellular tissue, nerve tissue, and blood-vessels, capable of reproduction or regeneration; and that the newly formed tissue acquires, within a few months of its formation, the structural characters of the old tendon, so perfectly as to be, under the microscope, with difficulty distinguishable from it; but it does not acquire, (at least it has not up to three years, the latest period to which these observations extend,) through its substance, the uniformly opaque, pearly lustre of old tendon. In the mass it retains a grayish, translucent appearance, streaked only with opaque fibres at a late period, so that the recent section affords an easy method of distinguishing the new from the old tendon.
>
> "2. That when a tendon has been divided subcutaneously, for the cure of club-foot, and its cut extremities are separated and held apart during the active period of the reparative process, *i.e.* the first two or three weeks, as by mechanical extension employed with variable rapidity in different cases, according to the activity of the reparative process, new tendon is formed of variable length, according to the extent of the separation, for the purpose of reuniting the divided extremities of the old tendon."

The greatest length he has seen in a human being of a newly-interposed piece, perfectly formed, and of thickness equal to that of the divided cord, was two inches and a quarter. This was in a girl aged nine years. It is probable that, in children, the length is generally from half an inch to an inch, and in adults, from one to two inches.

> "3. That the process—is essentially similar in animals and in man. That the perfection of the process is in exact proportion to the absence of extravasated blood and inflammatory exudation; and that the sheath of the tendon, when

consisting of loose-textured areolar tissue, as in the tendo Achillis, and other tendons surrounded by soft tissues, is of importance: 1, in preserving a connection between the divided extremities of the tendon; 2, in furnishing the matrix in which the nucleated blastematous or proper reparative material is effused; and, 3, in giving definition and form to the newly developed tendinous tissue.

"4. That the ultimate perfection of the reparative process by the regeneration of tendinous structure, and the elongation of a shortened muscle by the insertion of a portion of new tendon into its length, equal in strength to the old tendon, and closely resembling it in its microscopic characters, is marred only by the adhesion of the deep surface of the new tendon, to a greater or less extent, with the neighboring fibro-cellular tissue. These adhesions may limit the free play of the tendon, but will not interfere with sufficient motion being obtained. In cases of relapsed deformity, however, in which the operation of tenotomy may be repeated, these adhesions will, in many cases, prevent sufficient separation of the divided extremities of the tendon being obtained. Therefore, if much separation be required, a second operation is generally unsatisfactory in its result; and beyond a second operation, very little advantage can ever be obtained from operative treatment. Hence the necessity of the closest attention to the treatment after the first operation, and the explanation of the complete failure after repeated operations.

"5. That the perfection of the reparative process, especially in non congenital cases—in which more or less paralysis frequently exists, may be interfered with by injudicious after-treatment, especially by the too early and too rapid mechanical extension. And—that when tendons situated in dense fibrous sheaths, of a tubular form, are divided, there is great danger of complete non-union; the divided extremities of the tendon becoming adherent to the inner surface of the sheath without any direct connection with each other,—and, when the operation is performed near to such portions of the sheath, the extension must be conducted very slowly.

"6. That there is no reason for believing that—direct approximation and re-union of the divided extremities of the tendon must be first obtained, and—the required elongation—afterwards—be procured by gradual mechanical extension of the new connecting medium—occupying at least a month or six weeks; according to—some orthopedic authorities of the present time; but—that the required length of new tendon should be obtained during the time occupied in its formation, *i.e.* from about two to three weeks under the ordinary conditions of health; but in paralytic cases, and—patients of feeble health, this period may be doubled. Therefore, the object of gradual mechanical extension during this time, is to regulate the length of new tendon: 1, by forcibly overcoming ligamentous resistance in some cases—and, 2, by preventing a too rapid and extensive separation of the extremities of the tendon, in other cases, especially in those of non-congenital origin, in which many of the ligaments offer no resistance, and the reparative power is so feeble, from partial or complete paralysis, that rapid extension, separating too widely the divided extremities, would endanger their union, and also when tendons situated in or near dense, tubular sheaths—are divided.

"7. That the new tendon remains during life as a permanent tissue, and as an integral portion of the tendon the divided extremities of which it has been formed to reunite."

He takes some pains to justify his disbelief that the new matter progressively contracts till it forms only a "linear cicatrix," the muscular matter lengthening to an equivalent extent.

"8. That the effect of this permanent elongation—is not only to correct deformities mechanically—but that—its higher physiological or dynamic object is to allow of motion being gained—voluntary motion is also obtained, and is followed by an increased development of the muscular structure.

"9. That when recontraction of the foot takes place, and the deformity returns at a distant period after tenotomy, this does not depend upon absorption of the new material—but upon structural alterations in the muscular tissue."

These propositions, which we have abridged, are a summary of the conclusions principally advanced and supported in this very beautiful book. It can certainly not be denied that Mr. Adams's volume has the aspect and attributes of sterling merit. He gives us many dissections, some from his friends, a copious series of experiments on animals, seven fine plates, and a sheet of wood-cuts, and, what has not been always justly or fully done among the Anglo-Saxons, a historical sketch of the progress of the discovery and invention of tenotomy. Still, however, as he very honorably states himself, "even at the present day, opinions differ very widely both with respect to the actual phenomena observed during the reparative process, and also as to the general pathology of the reparative process in tendons after division." Several of the propositions enumerated above are contradicted by the very highest authority, and we cannot compliment him as having settled the whole theory and practice. Perhaps, soon, some critic of industry, candor, and large practical experience, and who has exhausted the experimental part of this inquiry, some man who has no temptation to signalize himself by "peculiar views," may arise to show that, except in condemnation of each other, the competing authors are all right; that the study is extensive and diversified; and that every theory and each practice which has been advanced by such honorable men, will find its proper place in the complete survey of the whole. Our limits will not permit us to go much further than to state some of the discrepancies to which we allude.

His first proposition, as cited above, cannot, we believe, be controverted, unless, as we shall see, in assuming the identity of the new matter with tendon.

No. 2 has, we think, the prevailing authority in its favor; yet the school which he opposes with so much earnestness, and which believes that the new matter contracts into the *linear cicatrix* he alludes to, opposes this, and contains some certainly authoritative names. He enumerates Tamplin, Broadhurst, and Holmes Coote; and his quotation from Stromeyer must be considered as disagreeing with him.

A number of his quotations deny the truly tendinous character of the newly formed cord, allowing it not to contract into a linear cicatrix. He himself enumerates Pirigoff, Von Ammon, and Dieffenbach; and Paget, in his quotation, styles it exceedingly rare.

The whole memoir leaves upon our mind a strong feeling of suspicion that the general contractive tendency of all newly-formed connective membrane, which has explained such curious results in the morbid anatomy of the kidneys and liver, must shorten the new tendon, and hence prove one of the causes of ill success.

To No. 3 we presume no exception is to be taken, unless a microscopic one. The exclusive agency of "nucleated blastema," in the regeneration of tendon, seems to us hardly a thing to be conceded. Several authorities allege the active mediation of cells; and even Mr. Adams acknowledges that some of them are present.

Our only objection to No. 4 is one which we have cited above, the tendency to contraction of all connective cicatrixes.

At No. 5 we would express a doubt of the expediency of operating on many of the feeble and paralytic cases. On the impropriety of incising tendons in the vicinity of dense fibrous sheaths, and still more, of synovial capsules, the arguments of Mr. Adams appear to us conclusive and important.

No. 6 is perhaps plausible; but, in the present state of opinion among operators, it seems to us that one can hardly consider it settled. Is it not a problem to be decided by accumulated and general experience?

On No. 7 we have already said all that we imagine necessary.

No. 8 we judge as sound as possible.

To No. 9 we can hardly consent to subscribe. The facts alluded to have a woeful inclination toward the theory of contraction of cicatrixes in connective membrane.

We confess that we do not very clearly comprehend, as just, the supposition ascribed to the honored name of Stromeyer, that division of its tendon debilitates a muscle by depriving it of its stimulant to contraction, so weakening it as to permit its ultimate elongation. We have always fancied that when a muscle was allowed to contract without antagonism, the weakness which it acquired was connected with shortening, and that, though its contractile power might decay, its capacity of being lengthened would be diminished. As far as we can understand the phenomena thus explained, we should judge them to be owing to other causes.

ART. VII.—*Anatomy of the Arteries of the Human Body, Descriptive and Surgical, with the Descriptive Anatomy of the Heart.* By JOHN HATCH POWER, M.D., etc. 12mo., pp. 374. Fannin & Co.: Dublin, 1860.

THE work before us is based upon the late Dr. Valentine Flood's "Surgical Anatomy of the Arteries," published in 1839, a second edition of which was issued eleven years later, by Dr. Power, who made many important additions and alterations in the original. These additions included the anatomy of the heart, of the innominate and subclavian arteries, and the operations performed upon them, of the axilla and axillary artery; the operations on the brachial artery, the iliacs and their branches, and the femoral; the circulation of the blood in the liver and in the kidneys; and, lastly, the treatment of brachial and popliteal aneurism, by compression between the tumor and the heart. The main differences between the present edition and that of 1850, are that the former is increased in size, although the letter-press is not very materially changed, that it is abundantly and judiciously illustrated by wood-cuts, copied, or modified, from Maclise, Quain, Tiedemann, and Cloquet, and that a section has been added on the principal varieties of the arteries. Being thus enlarged and improved, without being voluminous, it presents the appearance of a new work, and will be found very valuable to the student and practitioner of medicine, as a book of reference. It deserves, and, we trust, will meet with a cordial appreciation.

In looking over the statistics of the ligature of the principal arterial trunks, we are struck with the want of more copious references, a point very desirable to those who wish to find the details of any case. Thus, under the head of ligation of the innominate, Norman, of Bath, is said to have performed the operation, in 1824, but we are not informed where the case is published, nor have we ever been able to discover. In the same table is included the operation of Dr. Cooper, of San Francisco, thus making the tenth fatal case. The same surgeon has recently performed a similar operation, the subject perishing of secondary hemorrhage, on the forty-first day. Eleven fatal cases do not, therefore, offer any special inducements for a repetition of the procedure.

Under the head of ligature of the abdominal aorta, we find the particulars of the fifth and last case, that of Mr. South, in 1856. No authentic report of this operation having been published, the following facts, communicated to Dr. Power, will prove interesting:—

"The man was thirty years of age, and a hard drinker; had had a strange, uneasy sensation two months before his admission, and six weeks after noticed a small, hard, pulsating swelling in his right groin, which grew rapidly, and when admitted was as big as a goose-egg. Soon suffered paroxysms of violent pain, and leg became numb. Eleven days after, the aorta was tied without difficulty by a cut from the tip of the tenth rib to the superior iliac spine. In the course of a few hours, first one, and subsequently the other limb became discolored; was in constant profuse perspiration, and exceedingly restless. Died forty-two hours after. Examination showed aneurism of right external iliac artery."

ART. VIII.—*A Treatise on Human Physiology; designed for the Use of Students and Practitioners of Medicine.* By JOHN C. DALTON, JR., M.D., Professor of Physiology and Microscopic Anatomy in the College of Physicians and Surgeons of New York, etc. 8vo., pp. 690. Blanchard & Lea: Philadelphia, 1861.

A SECOND edition of this deservedly popular work having been called for in the short space of two years, the author has supplied deficiencies, which existed in the former volume, and has thus more completely fulfilled his design of presenting to the profession a reliable and precise text-book, and one which we consider the best outline on the subject of which it treats in any language. Dealing more with the important facts and discoveries in physiological science, Dr. Dalton does not encumber his work with the discussion of unsettled questions or theoretical topics, but presents his readers with a clear and concise digest of all that is really worthy of being known. The additions in the present issue consist in the introduction of a chapter on the special senses; a chapter on imbibition, exhalation, and the functions of the lymphatic system; the rearrangement of the chapter on the cranial nerves; alterations in the sections on secretion, excretion, the circulation, and the functions of the digestive apparatus; considerations concerning the general properties of sensation and motion, as resident in the nervous system, and an account of some original experiments and conclusions relating to the function of the cerebellum.

The opinion, first advocated by Flourens, that the cerebellum was the centre of association or co-ordination of the different voluntary movements, has since been proved by different physiologists, by removing the whole or portions of that organ, when this power is lost. Dr. Dalton shows, however, that even when a large part of the cerebellum of a bird has been removed, the control over muscular contractions becomes re-established in the course of time; and that the organ remains in the same condition as immediately after its removal, no attempt having been made at its regeneration. This temporary disturbance of the co-ordinating power, the author regards as due to the sudden injury of the cerebellum as a whole, and not to the mere removal of a portion of its mass.

We have searched in vain in this volume for an account of the cerebral circulation and of the cerebro-spinal fluid, both of which play so important a part in the physiology of the nervous centres. Can it be that we have failed to find it, or that the distinguished author has not deemed these matters of sufficient consequence to bestow upon them even a passing notice in a purely elementary treatise?

ART. IX.—*The Principles and Practice of Surgery.* By WILLIAM PIRRIE, F.R.S.E. Second edition. 8vo., pp. 878. John Churchill: London, 1860.

WE are glad to see that the work of the distinguished Aberdeen Professor has reached a second edition, a distinction justly due to its merits; for we have always regarded it as the best outline of surgery in the English language. The first edition was issued in 1852, and was soon after reproduced in this city, under the supervision of Dr. John Neill, at the time Demonstrator of Anatomy in the University of Pennsylvania. By economy of space, and the employment of smaller type, Mr. Pirrie has been enabled to introduce into the volume, without at all increasing its bulk, an amount of new matter equal to nearly one-third of the original. This addition greatly enhances the value of the book, which will thus be still more sought after by the student and young practitioner for whose benefit it has been chiefly prepared. The style of Mr. Pirrie is remarkable for its clearness, and the manner in which he has treated the subject shows him to be a perfect master of it. He occasionally refers to American writers, and we notice one or two paragraphs where the printer has omitted the inverted comma where the author evidently intended it to be used. Such omissions are always exceedingly vexatious to an author, inasmuch as they tend to place him in a false position before the public. The volume is beautifully printed, and the engravings, which are quite numerous, are executed in the highest style of the art. We may add that Mr. Pirrie has not omitted to notice any subject properly appertaining to surgery, thus imparting a degree of completeness to his work, which some of his British brethren might advantageously imitate.

We are not a little surprised that so excellent a surgeon as Mr. Pirrie should still advocate so painful and barbarous a proceeding as the entire removal of the nail in "ingrowing" of this structure. "The proper remedy for this painful affection," he remarks, "is removal of the nail, and afterward treating the ulcer according to the usual rules of practice. To remove the nail, the surgeon firmly grasps the toe with his left hand, passes one blade of a strong-pointed pair of scissors beneath the nail up to its roots, then cuts it through its entire length, and twists off first one half and then the other." Surely the *proper* way is not to do this, but to remove the offending *edge* of the nail on each side, in its entire length, from the matrix forward, the knife being used instead of the scissors.

ART. X.—*The Science and Art of Surgery, being a Treatise on Surgical Injuries, Diseases, and Operations.* By JOHN E. ERICHSEN. Third edition, enlarged and carefully revised. London, 1861.

HARDLY eight years have elapsed since the first appearance of this work. The author has, therefore, just cause to be proud of the favor which it has received from the profession at home and abroad. The present edition is the third, which was issued at London, in November, 1860.

"Every page," says Mr. Erichsen, "has been carefully revised. The text has been considerably enlarged, and in many parts rearranged. Several new chapters have been added, and many new illustrations introduced. The table of contents and the index have been rendered as complete as possible, so as to facilitate reference to the numerous subjects treated of in the body of the work."

Four hundred and fifty engravings accompany the present edition, which may, therefore, in reference both to these and other matters, be regarded as a great improvement upon the second edition, issued in this city in the latter part of 1859. One of the most interesting additional chapters in the new edition is that on "sacro-iliac disease," a strumous affection of the sacro-iliac articulation, very rare in this country, but sufficiently frequent in Great Britain, where Mr. Erichsen was the first to give a clear and comprehensive account of it. We regret that our limits do not permit us to transfer some of his valuable remarks upon this disease to our pages.

It would be superfluous to speak of a work the merits of which are so universally acknowledged as those of Mr. Erichsen's Science and Art of Surgery. The treatise is a model of its kind, and our only regret is that the distinguished author has not bestowed the same amount of attention upon the diseases of the eye and ear that he has devoted to other subjects. This omission necessarily leaves the work imperfect, and compels the student to supply himself with separate treatises on ophthalmic and aural surgery.

The present edition is comprised in one thick octavo volume of 1167 pages, closely printed in small type, and affords, therefore, an immense amount of reading matter. The wood-cuts are well executed, and the whole mechanical performance reflects great credit upon the publishers, Messrs. Walton & Maberly.

ART. XI.—*Transactions of the Epidemiological Society of London.* Vol. I., Part 1. 8vo., pp. 128. Richards: London, 1860.

THE Epidemiological Society of London was founded, in 1850, for the purpose of investigating epidemic diseases, and of collecting and promulgating such facts, relating to the causes, origin, propagation, mitigation, prevention, and treatment of epidemic diseases, as appear to be established on sound and sufficient evidence, thus adding new views to the common stock of professional knowledge. On the outbreak of an epidemic in any place, it also purposes to institute a rigid examination into the causes of the first cases, and to ascertain whether, and by what means, they admit of prevention.

Abstracts of the monthly proceedings of the Society have appeared, from time to time, in the *Lancet, Medical Times and Gazette,* and *British Medical Journal;* but as these gave merely a general idea of the contents of many valuable papers, the council determined that the Society itself should publish its transactions. The present volume is, therefore, the first result of that determination, and it will be found to contain an interesting address by the president, Dr. Babington; a paper on the "Theory of Zymosis," by Dr. Richardson; a valuable report by the committee on "Diphtheria;" "Suggestions for Utilizing the Statistics of Disease among the Poor," by Dr. Milroy; and "Remarks on the Topography and Diseases of the Gold Coast," by Mr. Clarke.

ART. XII.—*The Medical Critic and Psychological Journal.* Edited by FORBES WINSLOW, M.D., etc. No. 1, Jan., 1861. Churchill, London.

DR. WINSLOW'S *Journal of Psychological Medicine and Mental Pathology* has always been numbered among our most valued exchanges, every number being replete with interesting and highly useful matter. "In forwarding No. 1 of *The Medical Critic,* the first of a new series of Dr. Winslow's *Psychological Journal,* the publisher respectfully directs the attention of the editor to the fact that it is to be no longer exclusively psychological in its character, but that subjects of general interest to the medical profession, as well as to the public, are to be discussed in its pages." Although the journal is to be enlarged to two hundred pages, we regret to see that a series of essays, similar in literary character to the leading articles of *The Times,* and papers in the *Saturday Review,* are to be introduced. In its former guise, the periodical was so excellent that it could scarcely be improved upon; and we are, therefore, of the opinion that the new feature forms a very questionable addition to its pages.

Original Communications.

ART. I.—*Observations on the Proximate Cause of the Intermitting Pulse, and on the Forces producing the Venous and Absorbent Circulations.* Read before the Cincinnati Medical Society, July 5th, 1859. By THOMAS CARROLL, M.D.

IT is now more than thirty years since I began to observe with care the phenomena attending the intermitting pulse, and their probable cause; at a somewhat later period, my attention was arrested by a few facts to a careful observation of the venous circulation. Several cases were observed in which the pulse intermitted through a longer or shorter period. In one of these the pulse was subject to constant intermissions through a period of ten years. In this instance, one intermission took place every fourth pulsation, with but little variation. When death occurred, no examination was made of the body; but it was thought that tuberculosis had produced the fatal result. A far more probable cause, however, was a diseased condition of the heart, or of its valves. When a student, I observed, in a man thirty-five years of age, the intermitting pulse through a period of several weeks. At the time, the patient was laboring under rheumatic fever, from which he recovered; he was also relieved of the intermitting pulse, but died a few years after. These, with other cases, produced a strong desire to discover the causes which brought about such results.

The remote cause could easily be supposed to be nervous irritation, etc.; but the immediate or proximate cause seemed to me a mystery which could not be unraveled by anything I then knew. At first view, the knife and the dead body appeared to be the only means by which it could be reached; but what could be here told, when the heart had become motionless?

I knew that the hearts of living animals had been exposed, and the action of the auricles and ventricles observed; but the hurried circulation of a heart, thus exposed, was not calculated to instruct the observer in the true nature of the venous circulation. Hence, but little had been observed which could increase our knowledge on this subject. Under these circumstances, I concluded to make a series of observations on exposed hearts whose actions should be partially suspended, and, if possible, rendered much less frequent than when in health. To effect this, a few drops of prussic acid were dropped on the tongue of a cat; and in a few moments the animal became motionless. I now immediately cut down on the pericardium, extended the incision through the diaphragm, and exposed partially the abdominal viscera. The pericardium was then slit open, and one of the auricles freely exposed. The heart was found to still act, and to continue to do so for about half an hour. This circumstance gave me great pleasure, as the slowness of the action, I thought, would afford ample opportunity for careful and accurate observation. There were but few strokes of the ventricles during a minute, and these became less frequent until they ultimately ceased.*

I observed, however, that although this action of the ventricles became less frequent, the diminution was not perfectly regular; but that, after the ventricles had labored awhile, intermissions of them occurred every few strokes. But this was not the case with the auricles, for their action remained steady; and although their contractions became less frequent, yet there was the most perfect regularity to the last in this diminution, until, finally, they made a last effort to stimulate the ventricles to further contraction.

Now, it is evident that the ventricles, in all cases of intermitting pulse, lose at each intermission the time of one ventricular contraction, or nearly so. Not so, however, with the auricles; for they labor on or contract as usual. This regularity is less or more frequent, owing to rest or motion, or other circumstances; but still they never intermit as the ventricles do.

It is, I believe, conceded that the auricles, by their contraction, fill the ventricles with blood, and the ventricles are by this means forced to contract and throw their contents into the aorta and pulmonary artery; and that these contents are prevented from returning during their quiescence by the semilunar valves. At least this view of the action of the auricles is believed by nearly all physiologists whose opinions are worth anything. After this round of contraction and relaxation of the ventricles and auricles, another succeeds, and continues indefinitely; and in health these contractions are regular—that is, the contraction of the ventricle regularly follows that of the auricle. But this harmony of action is occasionally disturbed by some abnormal cause. The auricles contract and fill the ventricles; but the latter disobey the stimulus of the blood forced into them, and do not contract. Now, what takes place? The auricles have thrown most of the blood which the cavas and pulmonary veins had sent them into the ventricles. The cavas and pulmonary veins have no more power of filling the auricles, and of course life must cease unless they are again stimulated, from some source, to contraction. Death, however, is prevented by the fluid that has just been thrown into the ventricles flowing suddenly back into the auricles: for when the ventricles do not contract, the bicuspid and tricuspid valves remain perfectly quiet, resting on the walls of the ventricles; thus leaving the blood which had been forced into the ventricles free to flow back, which it immediately does, and fills the auricles, which are thus again stimulated to contract. And now the ventricles no longer resist, but contract, and continue to do so for a longer or shorter time, according to circumstances; generally the regular contractions occur two, three, or more times, and then another intermission takes place. This recurrence of intermission sometimes continues during a considerable time: and it may now be said that the action of the heart is in an abnormal condition, or, in other words, that the subject of it has intermitting pulse, or an intermitting ventricular action. It is here a matter of importance to know that the cavas and pulmonary veins have no power of refilling the auricles, as I have observed; that the ventricles after receiving the blood from the auricles were not thereby sufficiently stimulated to contract; yet as their valves remained quiescent, the blood flowed back into the auricles, which were in a relaxed condition, and by their contraction had produced a condition in their locality bordering on a vacuum, so that the blood, in finding an equilibrium, restimulated the auricles. But, as has been stated, no part of this stimulation grew out of blood sent from the cavas and pulmonary veins. When the auricles were thus stimulated by the return of blood from the ventricles, they contracted again, and now succeeded in forcing the ventricles to act; and the blood, instead of being thrown back to the auricles, took its wonted course through the arteries. Now, the auricles became again filled; but this was done by fluid from the cavas and pulmonary veins.

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* When making these experiments, I laid bare the intestines in several cases, and found that by pricking them with a sharp instrument the peristaltic action was beautifully excited, running from above downward, and rendering the bowel as hard as a whipcord.

We have now reached a point which, if we can clearly understand how the cavas and pulmonary veins are enabled to fill the auricles, must be of the greatest moment to the interest of physiology; because here lies the great secret of the power by which the venous circulation is carried on. As has been said, the blood that stimulated the auricles, after the intermission of the ventricular contraction, came from the cavas and pulmonary veins, but no drop appeared to swell the auricles until after the contraction of the ventricles; then the auricles were suddenly filled by a wave of blood from the cavas and pulmonary veins. This wave was obviously produced by the stroke and swell of the arteries.

My observations during my examinations were confined mostly to the ascending cava and the descending aorta, as these were brought more into view; hence, I saw that the moment the wave of blood was propelled along the artery, the auricle was filled by a sudden jet of blood forced from the ascending cava. This propulsion caused an instant contraction of the auricle. Hence we must now consider the facts which, connected with the venous circulation, demonstrate the cause of the motion of the blood in the veins.

It has been seen, in the course of this essay, that the wave of blood passing through the great arteries causes the auricles to be filled. How this wave of blood has the power of sending that of the cavas and pulmonary veins into the auricles and distending them, is the great question to be solved with regard to the venous circulation. We shall, for this reason, take a view of the location of the large arteries and veins, and of the tissues immediately connected with them. These tissues are bound up, in a common sheath, with the greater arteries and veins; and these again are surrounded by other tissues, more or less dense; and all are supported, as matter in general, by the weight of the atmosphere.

Now, let us admit that the descending aorta and the ascending cava are in their usual position; that the vena cava is filled with blood, or nearly so, and that the aorta has discharged most of its contents; that now the heart, to bring about an equilibrium, contracts, and throws an ounce of blood into the artery which is in juxtaposition with the cava, and both surrounded by dense tissues, it is then obvious that the fluid in the vein must be forced out of its place by the wave that is propelled along the artery. The blood in the cava is prevented from a retrograde motion by the valves in its ramifications, and by other causes, such as the constant supply that is passing through the valves and along the veins; hence, the blood acted on by the swell of the aorta rushes by the distended artery, and finds room in the quiescent auricle and ventricle. The auricle now, however, by distention stimulated to contraction, sends more blood into the ventricle, and urges, by the quickness and force of its stroke, the action of the ventricle. Now another ounce of blood is again forced along the artery by the ventricle of the left side, the artery again lashes the cava, and with the aid of the descending cava again fills the auricle, and it again relieves itself as before.

As this wave of blood progresses in the artery, it sends, of course, nearly a corresponding amount in the opposite direction; room for which is made by the lessening of the calibre of the artery, by its contraction in forcing onward the wave of blood, so that the blood in the vein finds an exit on the side next the heart.

The venous blood, at a distance from the heart, and in the smaller vessels, has rather a continuous than an intermitting motion. This is especially the case where veins are unaccompanied by arteries; but even in situations where veins are not accompanied by arteries in immediate juxtaposition, the blood flows in them occasionally by jets. This I have observed more than once at the bend of the arm, in plethoric subjects, when I had opened a vein in that locality. The proximity of the arteries and veins in this part is such that, where there is much tension, the flow of blood from the veins will occasionally demonstrate the arterial stroke by flowing in jets.

Now, we know that in the veins of the extremities there are numerous valves, especially after they dip beneath the fascia, and that these valves prevent a retrograde motion of the blood in those veins. The arterial blood, carried along the arteries beyond this bulwark of the veins, forces their contents into the venous capillaries, and the venous blood receives an impulsive motion by the swell and stroke of the numerous small arteries, and is by this means hastened through the valves, which now become a barrier against its return; and now the larger veins approximate more closely, and are finally bound up in the same sheath with the great arteries of the economy. These large arteries, of course, constantly swell and relax—lashing the veins bound up with them, the fluid in which, finding no way of returning behind the valves which it has passed, seeks another outlet, which it finds in the empty and quiescent auricles. This entrance of blood into the auricles is, as we have seen, produced by the stroke of the descending aorta on the ascending cava—each swell and stroke of the artery filling, in conjunction with the supply from the descending cava, the right auricle. If, then, this condition of the circulation exists in the neighborhood of the heart, it must be obvious that it exists throughout the entire circulatory system.

The reader will here recollect that I have confined my reasoning mostly to the descending aorta and ascending cava. It is, however, intended to apply to the ascending aorta, the pulmonary arteries, and descending cava. The forces which carry on the circulation through the pulmonary veins are, undoubtedly, of the same kind as those that we have described as carrying on the general circulation. The pulmonary artery and its ramifications are placed in the most advantageous situation for forcing the arterialized blood through the pulmonary veins toward the left auricle. The left pulmonary veins cross in front of the descending aorta, and behind the pulmonary artery, and reach the left auricle, and at the moment the ventricles are contracting throw their blood into the auricle; while the right pulmonary veins are aided in discharging their contents into the auricle by their proximity to the aorta immediately below the arch. The shortness of the pulmonary arteries and veins aid in the rapid circulation through the lungs. Collapse of these organs is much prevented by the bronchial tubes, whose rings, and general cartilaginous structure, with the air constantly in them during expiration, and the weight of the atmosphere during inspiration, give much support to these vessels. These forces probably equal the defenses belonging to the venous system in general, by the tonicity of their coats, and by the dense tissues immediately surrounding them, as well as by those still more distant, so that the powers of the heart and arteries are about equally supported in every part of the body exterior to the bones and tendons.

We know that when the valves of the veins, by disease, over-exertion, or by a long depending position of a limb, lose their power of closing and sustaining their column of blood, a serious disease is the consequence.

But if we review what has been said in the foregoing pages, with regard to the forces which carry on the venous circulation, I think it will appear that, so far as induction can prove anything, it has been done: firstly, in the action of the heart causing the swell of the arteries; and secondly, that that swell causes the veins to fill the auricles. However, to put the matter at rest, I shall bring to my aid the following experiments:—

I gave, with the assistance of my friend Mr. Scott, to a medium-sized dog enough of prussic acid to suspend animation; I then cut down rapidly on the heart, and opened the pericardium, and exposed most of the right auricle and part of the left. I then made an incision about a quarter of an inch long and a little to the right of the auricular appendix, while the heart was yet acting strongly. The moment the incision was made, the blood was forced out six or eight inches in jets in obedience to the swell of the arteries, and not by the contraction of the auricle, for that was passive. A jet of blood from the orifice in the auricle occurred at each contraction of the left ventricle, for the right did not act. This experiment demonstrates the accuracy of all the conclusions I had arrived at before, because the force of the blood sent along the cavas had obviously power enough to fill the auricle; but it now seemed clear that the blood not only stimulated the auricle, but in a great measure filled the ventricle, and all that the auricle seemed to do was to stop the jet of blood which was forced into it, and by a sudden contraction to give an impulse to the ventricle which again made it contract; for I observed that the auricle by contraction did not materially lessen the amount of blood in it, but simply produced an impulse in the amount already in it and the ventricle, so that the organ was stimulated to contract.

As a confirmation of the foregoing circumstances, I shall report the following case: I gave a cat of a large size enough of prussic acid to cause sudden quiescence. My friend Mr. Scott cut down on the pericardium and slit it, so that the auricles were exposed; but, owing to the intense impression of the poison, and a little longer delay than usual in opening the pericardium, the heart had ceased to beat. The auricles were much congested, and indeed the ventricles seemed to be full of blood. The hope of any action seemed at an end. I, however, made a small incision into the right auricle, just at the root of its appendix; blood now flowed in a continuous stream for a few moments—then, to our great astonishment, the contraction of the left auricle and left ventricle began, and blood was thrown in jets from the incision at each contraction of the ventricle during eight or ten pulsations.

I have mostly, in describing the action of the auricles, followed the generally received opinions, that their contraction fills the ventricles; but this, as I have shown, is only partially true. It would, indeed, seem that the auricular contraction is only useful to stop the jet of fluid sent by the veins into them, and to direct the current of blood with force enough to excite the ventricles to contract.

If we consider the formation of the auricles, we must come to the conclusion that they are badly calculated to throw any considerable amount of blood into the ventricles. They have no valves to close at the termination of the veins, so that if they were to empty themselves completely, they must do it at a great disadvantage, as there would be no barrier between them and the termination of the veins. We find the ventricles, defended on the one hand by the bicuspid and tricuspid valves, and on the other by the semilunar valves, have the power of very nearly emptying themselves; but the auricles are in a great measure cul-de-sacs, with large and undefined openings, which have at every systole to receive a renewal of fluid with a force that answers all the purposes of valves, and even more, as it not only fills them, but in a great measure the ventricles too. Without this rapid current, valves would be of the last importance. So, then, it would seem that the principal use of the auricles, as has been said, is mostly to direct the current of blood into the ventricles, and then a contraction, more or less severe, stimulates the ventricles to action. The following experiments will elucidate how much the swell of the arteries has to do with the venous circulation.

I gave a large dose of prussic acid to a cat, so that the natural action of the heart had ceased before I could observe its pulsations. I, however, found that the auricles were quite distended but did not contract. I then, in order to prove that the current of blood sent along the veins was caused by the swell of the arteries and no other force, made a small incision close to the root of the auricular appendix. The blood now flowed out in a quiet stream, rising about two inches from the incision; this was evidently produced by the tension of the veins and auricles; there was now no jet.

These experiments seem to prove, beyond the possibility of a doubt, the accuracy of my reasoning with regard to the forces causing the venous circulation.

I recently suspended the animation of a cat, cut down and opened the pericardium so that the right auricle and part of the left were exposed. In making this dissection I opened both pleuræ, the effect of which was to produce an immediate collapse of both lungs, and to cause a sudden withdrawal of the supply of blood from the left auricle, and, of course, an early cessation of the action of that organ; but as it acted for a short time, though on a very small amount of blood, it still produced a few contractions of the left ventricle. The right auricle still continued to act and to stimulate the right ventricle, but owing to the complete quiescence of the left ventricle, it could not empty itself of its contents, which was probably owing to the fact that the valves of that organ had not the power of closing the communication between it and the auricle. It was, however, convulsed for a short time, owing probably, or even certainly to the considerable amount of blood it contained. This convulsive action continued for a minute or two after the cessation of the action of the auricle, but at no time amounted to a full contraction.

This experiment shows that one ventricle may act, though in an imperfect manner, while the other has become entirely quiescent; but, of course, this must be of short duration. It, however, proves that both the left and right ventricles may act independently of each other. Another circumstance occurred in the contractions of this heart worthy of notice, which was, that during a few contractions of the ventricles, they acted twice, independently of the action of the auricles; then again the auricles had to contract several times to produce another ventricular contraction. This variation in action from what I had often seen, seemed to be produced by the sudden cessation of the circulation through the lungs, due to their collapse, from the admission of atmospheric air within the pleuræ. Still the same intermissions occurred in the ventricular action, and were only relieved by unceasing contractions of the auricles.

These experiments seem to close the avenues of doubt with regard to my reasoning on the forces which carry on the venous circulation, and the abnormal causes of the intermitting pulse. I could only now wish for an experiment on the right auricle by making smaller incisions to see how far the blood would be thrown by each swell of the arteries; but this is at present out of my power; and I must, therefore, leave it to others, or to a future time.

We now come to consider the portal circulation; and, in order to have the matter properly before us, we must regard, for a moment, the anatomical, or, rather, physiological construction of the portal system, as well as some of the parts immediately connected with it.

The portal vein may be compared to a tree, with its roots fixed in the liver, and its branches spread out on the mesentery and intestines. The trunk is short, and, like all the branches, has no valves, so that the blood moves in it with ease. The ramifications in the liver are preserved against external pressure by the dense and unyielding substance of that organ, so that no impulse from without, made by arterial pulsation, can affect its circulation; but the hepatic artery, in its ramifications, traverses the same channels, being bound up by the capsule of Glisson in company with this vessel and the hepatic duct, so that the flow of blood in the artery has a direct influence on the duct and vein bound up with it. And this influence extends throughout their branches; for, there being no valves in the portal vein, the blood hurries on, without resistance, to the radicals of the vessel. Now, the hepatic artery sends, at each pulsation, a certain quantity of fluid into the liver, which must have room made for it. The blood in the branches of the portal vein must, of course, yield in some direction; and, there being no valves to obstruct its motion toward the radicals, it takes that direction, because the calibre of the ramifications, taken together, is much greater than that of the trunk. But still another obstruction to its return, and one that is irresistible, is the stroke of the abdominal arteries, without the liver, which subjects all the branches of the portal vein to their action, unless, indeed, it be those within the spleen and pancreas, which are defended, in some degree, by their organism, from this influence. The abdominal muscles, with the diaphragm, and peristaltic action also, aid in pressing the blood toward the liver; and hence there is a material difference in the mode by which the portal ramifications without the liver, and those within it, are acted on by external causes.

But, to make the matter more clear, let us recapitulate, partially, what we have shown. The ramifications of the portal vein are acted on by various causes. The motion of the body acts on them; the muscles of the diaphragm and abdomen produce alternate tension and relaxation; and, independent of all this, comes a power which especially causes this blood-vessel to act the part of an artery. Seventy times every minute an ounce of blood passes through the descending aorta, and much of it, of course, through the abdominal arteries. The swell of these arteries must have space made for the fluid thus increased in quantity. This space is made by the flow of blood through the ascending cava, which has to discharge a certain amount through the diaphragm at every pulsation; and the portal vein, too, being now lashed by each pulsation of the abdominal arteries, throws a portion of its contents through its wide-spread ramifications in the liver, whose united diameter constantly increases from its first bifurcation. The hepatic veins have walls so constructed that the arteries within the liver and the ramifications of the portal vein have but little power in forcing their contents onward; but as they have comparatively unyielding walls, the action of the descending aorta, after they emerge from the liver, urges them to throw their contents into the vena cava ascendens. These veins no doubt have a constant pressure on them caused by the blood pressed into the liver by arteries and portal veins.

Calculations show that about 260 pounds of blood pass the abdominal aorta and its branches every hour; and that no less than 6240 pounds are sent through them every twenty-four hours. These realities show that an immense amount of blood passes through the blood-vessels of the abdomen, on its way from the heart; and prove that a similar amount must be sent toward the heart by the ascending cava, much of whose blood is received from the hepatic veins.

The ultimate radicals of the portal vein have, no doubt, much to do with the easy transmission of the blood through its ramifications in the liver. We here find a curious circumstance in the formation of the gall-duct and gall-bladder; for it would seem that the bile, after its formation, has no power in general of finding its way back into the circulation, while the influx of arterial blood constantly urges its flow along the biliary ducts, until it emerges from the substance of the liver, and is then either forced through the hepatic duct until it is discharged by the ductus choledochus into the duodenum, or finds a resting-place in the gall-bladder.

I propose now to show that the fluids in the absorbent system are carried through them by the same forces which carry on the venous circulation; and that this is particularly the case in the thoracic duct. Now this duct lies between the descending aorta and vena azygos, and runs close to the left carotid, until it descends to enter the venous system. It is supplied with numerous valves, and is so fixed that it is constantly lashed by the arteries among which it lies. This is, however, especially the case with regard to the aorta and left carotid; for the swell of these vessels press it at every pulsation, so that its contents are forced in all directions, but can only find an avenue for escape in its motion toward the left subclavian vein; for when a drop of its contents once passes a valve it can never return. Of course a constant stream is directed toward its final termination, where, by proper experiment, it may be seen dropping its contents, drop by drop, evidently being urged forward by each pulsation of the aorta. Can, indeed, there be any other method by which the absorbent system can perform its functions, than by the impulse which is given by the swell of the arteries?

My last argument with regard to the direct or motive power by which the venous circulation is carried on, is that of the circulation of the brain.

This organ is situated in a bony case, which in the adult is unyielding. The only inlets and outlets are those of the arteries and veins, and these, we know, ramify throughout the organ and are constantly full; that is, there is in the brain no empty space. The arterial blood may, indeed, be greater at one time than another, and so may the venous be less or greater as the arterial is increased or diminished; or there may be an atrophied condition of the brain, which may require greater distention of the arteries. Still, the concavity of the cranium must throughout life be full.

This being conceded, proves that a single drachm, or even a drop of blood being admitted by the arteries, must of necessity displace an equal amount of venous blood. The question then is, how is this effected? We know that the longitudinal and lateral sinuses are constantly filled with blood even after the extinction of life; and we know also that they are supplied by numerous veins, some of which enter so that their contents cannot return to the brain. Now, when the stroke of the arteries occurs, and forces into the capillaries of these veins a certain amount of fluid, their sides are lashed by the arterial impulse acting on the brain, and a corresponding amount of blood is forced into the sinuses. The extremities of the sinuses rest in a fossa on either side, and have a free opening into the internal jugular veins. These lie throughout their entire length in a common sheath with the carotid arteries. Now, at the moment that the carotids swell with blood, they drive in an opposite direction the blood in the jugulars; so that just before the brain receives an impulse from the arteries the jugulars have been relieved of an equal amount of their contents, and are again ready to receive and actually invite a flow of blood from the sinuses. Thus in succession does the brain receive and is unburdened of its circulating fluid, nearly on the same principle or method as that controlling the motion of blood in the arteries and veins in the immediate neighborhood of the heart.

It may not be improper to refer here to physiologists who have written on the subjects contained in this essay, though I think extended quotations unnecessary. Among those most worthy of notice, the immortal John Hunter stands foremost, because he approaches nearer the truth than any other writer I have examined. Hunter observes that "there is a pulsation in the veins; for," says he, "when we bleed a patient on the hand or foot, we see a strong jet—much more in some than in others, and much more here than in the bend of the arm. The query is, does this arise from the immediate stroke of the heart, or is it by the lateral pressure occasioned by the swell of the arteries? To ascertain this the better, it is necessary to observe several things. We may remark that the pulsation in the veins is more in some parts than in others; thus, I should suppose it was more in the veins of the kidney, spleen, lungs, and brain, especially the last, than in many other parts; but this, from the lateral swell of the arteries, cannot from the above observations affect all parts alike; for the veins on the back of the hand being superficial, and not surrounded by vascular parts, could not be affected by arteries, and this acceleration given to the blood's motion in the smaller veins is carried to those on the back of the hand. But I think I have seen the difference in the projections so great, that it hardly could arise from that cause alone; and, indeed, if this was the only cause, we should have it in some degree in every vein; for every vein is so far surrounded as to be in some measure affected from the swell of the arteries of the part; but we certainly do not perceive it in so great a degree in the bend of the arm. The large veins near the heart have a pulsation which arises from contraction of the heart, preventing the entrance of the blood at the time, and producing a stagnation. This I saw very evidently in a dog whose chest I opened, and produced artificial breathing; but I could not say whether this arose from the contraction of the auricles, the ventricles, or both."

Now, in this quotation, we find this remarkable statement: that "the larger veins near the heart have a pulsation which arises from the contraction of the heart, preventing the entrance of the blood at the time, and producing a stagnation." Were this true, that is, that the blood in the veins experiences a stagnation when the heart contracts, there would be no possibility of the auricles being filled; because, it is only when the ventricles contract that the auricles can be replenished with blood; for, at the termination of the contractions of the ventricles, the auricles must be ready to refill the ventricles. This preparation of the auricles has taken place from the contraction of the heart, which becomes lessened for the moment; this lessening of the heart by contraction consequently causes a swell of the arteries, which swell forces the blood in the cavas and pulmonary veins to flow into the auricles, which now become stimulated to contraction. Of this, however, I have before spoken. From these remarks of Hunter, it would seem plain that he had not a perfectly clear idea of the venous circulation, although he observed much that was true, and only wanted further investigation and the discovery of facts to come to accurate conceptions of the matter.

But what must we say of the physiologists who have followed Hunter? Certainly not that they have added clearer notions of the venous circulation to our knowledge; but, rather, that they have not progressed a single step, if, indeed, they have not really rendered the subject more unfathomable than it was.

Dr. Carpenter does not, so far as I recollect, notice the opinion of Hunter on this subject; nor does any other physiologist, whose works

I have examined. Carpenter states, with regard to the venous circulation, that "the movement of the blood through the veins is, without doubt, chiefly affected by the vis a tergo or propulsive force which results from the action of the heart and arteries, and from the additional power generated in the capillary vessels. This is shown by the immediate arrestment of it which takes place when these forces are suspended." Now, this is a conclusive way of accounting for the cause of the flow of venous blood, but leaves us about where it found us; and, certainly, with very few more just conceptions of the particular manner, or power, by which this flow is effected. We might say, that unless the heart acted, venous blood would not continue to reach that organ; and we might say it with great propriety; but we would be left still ignorant of the real force or cause.

Anterior to, and at the time of Harvey, the liver was believed to send out the blood to the different parts of the body; but the true nature of the circulation was left to be demonstrated by that great man. The movement of the blood in the portal system is still, in the eyes of medical men, a mystery; yet all believe, and know, that blood is circulated through it.

There are opinions of physiologists which favor the notion that suction aids materially in carrying on the venous circulation. This notion is founded on a supposition that the auricles possess the power of dilatation, so that either a vacuum, or an attempt at it, draws the blood from the veins into the auricles. It has, however, been shown by Dr. Arnott, that this suction power is impossible. We think we have shown that the only power possessed by the auricles consists in repose and contraction, or, rather in contraction, as repose may not be considered a power. This action and repose of the auricles, we have most assuredly observed; the former being caused by the rush of blood from the cavas and pulmonary veins, the latter being caused by the condition of the heart. Another cause of contraction of the auricles is abnormal and only occasional; that is, when the contraction of the auricles fails to stimulate the heart to contraction, there being no renewed flow of blood from the cavas and pulmonary veins. The tonicity of the heart throws the blood back in the auricles with sufficient force to restimulate them; but of this we have said enough.

Other theories with regard to the forces which cause the venous circulation, or act as powerful auxiliaries, are founded on the action of the diaphragm, and other muscles which cause inspiration. The muscular system in general is also added to aid in this matter. There can be but little doubt that all these forces act to a small extent in aiding the venous circulation; but they act with equal, if not greater force, in aiding the arterial circulation.

We cannot close this essay better than by quoting the opinions of Laennec and Stokes, on the action of the heart and the peculiarities of the intermitting pulse. The former says that "at the moment of the arterial pulse, the ear is slightly elevated by an isochronous motion of the heart, which is accompanied by a somewhat dull though distinct sound. This is the contraction of the ventricles. Immediately after, and without any interval, a noise resembling that of a valve, or a whip, or the lapping of a dog, announces the contraction of the auricles. (I make use of these trivial expressions because they appear to express better than any description the nature of the sound in question.) This noise is accompanied by no motion perceptible by the ear; and is separated by an interval of repose from the duller sound and motion indicative of contractions of the ventricles, as it were to interrupt abruptly. The duration of the sound, and, consequently, the period of contraction of the auricles, is less than that of the ventricles,—an incontestable fact, of which Haller entertained doubts. Immediately after this systole of the auricles, there is a very short yet well-marked interval of repose; subsequently we feel the ventricles swell anew with the dull sound and gradual progression which characterize their action; then follows the quick and sonorous contraction of the auricles, and again the renewed but momentary immobility of the heart." On the intermitting pulse, he states that "the duration of the intermission is very variable, and may seem to make this affection into well-marked varieties. Sometimes the intermission is shorter than the arterial pulsations, sometimes it is equal, and sometimes it is longer."

"The first kind of intermission is most common. It is most frequent in old age, even during health. At other periods of life, it is only observed in certain diseased states of the heart, particularly hypertrophy. By means of the stethoscope, we ascertain that this species of intermission always succeeds the contraction of the auricles."

These quotations show that Laennec observed the action of the ventricles and auricles, both in health and disease, with wonderful accuracy,—an accuracy which we think aids in proving the positions we have taken. Yet we must acknowledge that he only observed those facts resulting from sound and motion. The opinion of Laennec, that the intermitting pulse in old age may exist during health, is probably correct; and it would seem almost certain that, in the young and middle aged, the existence of this morbid action is, as he states, the accompaniment, in all or most cases, of hypertrophy. The two cases which we have noticed in the first part of this essay go, we think, to prove this, as they both fell victims to an early grave.

Professor Stokes states, in his learned work on the diseases of the heart and arteries, that "among the physical signs of the derangement of the action of the heart, he knows of none more obscure in its nature than the doubling of one of the sounds. It is as if the sound was divided into two sounds; in some cases similar in tone and duration, in others, differing in both these qualities. This sign seems to affect the left more than the right side of the heart; and, in a majority of cases, occurs in connection with the second rather than the first sound." This last part of the quotation, that is, that "in a majority of cases, it occurs in connection with the second sound," goes to prove my position,—that the auricles, in the intermitting pulse, continue their contractions, though the ventricles do not. Had this learned physician understood the true nature of the intermitting pulse when he wrote, he would not have said that "among the physical signs of the action of the heart," he knew "of none more obscure in its nature than the doubling of one of the sounds."

In the foregoing discussion, I have avoided noticing the probable motive power by which the capillary circulation is carried on, for the reason that I have come to no certain conclusion about the matter. The capillaries may have a circulatory power independent of the heart's action; but I suppose that the arteries and veins, acted on by the heart, must be the great powers which move the blood in these ultimate terminations. The nervous system, or energy, no doubt has a great influence, through the coats of the blood-vessels, in determining their calibre; and, of course, has the power of sending blood to local parts, though this power can only aid the action of the heart. The capillaries may have a still greater energy, derived from the nervous sources, which may aid them to a circulatory power. We presume much that is now believed with regard to this supposed power is more imaginative than real. The report of the following case will clearly show that the great arteries and veins are placed in juxtaposition for other purposes besides convenience, and that such proximity is essential to the venous circulation:—

A. B., aged about seventy, a plasterer by trade, who had long been in the habit of excessive fits of drunkenness, became fatally diseased, as follows: When I was called to the case, I found the patient in bed, with his legs of a venous or purple color, his arms of a less intense venous hue, and his countenance in a slightly livid condition. The pulse, at the wrists, could not be felt; but the coats of the radial arteries were hard and unyielding. This circumstance led to the examination of the arteries at different points, and I found them equally hard, and without pulsation; so that ossification of their coats was obvious. I examined the carotids, and the temporal ramifications, and the arteries of the thigh and leg and arm, but could find no pulsation—nothing but stony hardness. From this condition of the arterial tubes arose, I concluded, the whole difficulty as to the return of the blood to the heart; for that organ seemed to act with moderate force, although there were some intermissions; and no doubt many, if not all, the larger arteries within the great cavities were in a comparatively healthy condition, which allowed their action on the great veins near or more distant from the heart. I asked the patient if he could rise and walk. He said he could; and arose and walked about ten feet with much difficulty. The moment he became erect, great difficulty of breathing occurred. After he sat a few minutes, I requested him to return to bed, which he did; but his weakness seemed much increased by the effort. I found that he had been in the habit of rising occasionally; but for a long time with the same symptoms recurring. About a month after I first saw this patient, he died. His disease had lasted, in a serious condition, for some months before I saw him, and gradually increased, until it terminated in death.

Now, it would seem that this case goes far to prove that the elasticity of the arterial tubes is essential to the venous circulation; and we think it shows that the capillary system has but small share in supplying the forces which carry on the general circulation, other than what grows out of the ultimate termination of the arteries.

Since writing the foregoing pages, I have observed in the November number of the *London Lancet*, of 1859, a communication by James Nichols, F.R.C.S., "on the lateral pressure and venous circulation." This writer, again in the February number, 1860, of the *Lancet*, has another communication on the same subject. The arguments in favor of the lateral pressure and swell of the arteries, causing the venous circulation, are able; but founded, not on experiment, but on supposed results which must occur from the stroke and swell of the arteries. These views of Mr. Nichols are similar to those of John Hunter, on the same subject. Hunter, however, abandoned his views, because of difficulties which he supposed lay in the way of his reasoning.

It is clear that Mr. Nichols is a profound thinker. I, however, think I have demonstrated what he has only supposed; and extended my observations to the action of the heart itself, with its irregularities. My essay was read before the Cincinnati Medical Society, in July, 1859; and Mr. Nichols's first communication was published in the November number of the *Lancet*, of the same year.

It is also true that my discoveries were mostly made before I had seen any of Hunter's works. Both my reasoning and experiments are my own; and I regard them as putting the matter at rest as to the forces carrying on the venous, and I hope also, the portal and absorbent circulations.

ART. II.—*A Report on Epidemics and Endemics.* Read before the Medical Society of Southwestern New York. By O. C. GIBBS, M.D., of Frewsburg, New York.

CHOLERA.—The epidemic to which attention is next invited, in the furtherance of this report, is cholera. This disease is probably more recent in its origin than the yellow fever or the plague; but, while its history and origin may not be obscured by the mists of ages, its unfortunate victims are already numbered by millions. Its onset is not less sudden, its attacks not less fatal, and the field of its ravages is far less circumscribed than that which characterizes the two epidemics already alluded to.

Perhaps the first well-authenticated visitation of this disease, as an epidemic, was in 1762, when, in the low and damp regions bordering on the Bay of Bengal, it prevailed with a terrible malignancy, destroying many thousand lives. In 1780 and 1781 it again prevailed in the same region, and perhaps with a still greater mortality than in 1762. Its attacks were sudden and dreadfully fatal, killing mostly within the first hour: it is said that thousands dropped dead amid the mirth and rejoicing of festivals.

It was not, however, until the year 1817 that the attention of the physicians of Europe and this country was prominently directed to the ravages and spread of this disease. In that year it attacked the Indian army, organized for a crusade against the Hindostan chiefs, and in twelve days it is said that more than 10,000 perished. The carnage of battle and the ravages of famine were nothing in comparison with the dreaded and deadly visitations of the unseen pestilence. Jessore and Calcutta were dreadfully desolated. From Calcutta it spread westward along the valley of the Ganges to the interior of Hindostan; southward along the Coromandel coast to Madras, and eastward into the Birman empire. In 1818, 1819, and 1820, the disease slowly spread in the directions indicated, along the valleys of streams and by the sea-coast. It was not until the year 1821 that it reached the shores of the Persian Gulf, and did not fairly enter Europe until 1830.

Two years subsequently it made its first appearance in this country at Quebec, and only sixteen days later at New Orleans. From Quebec it spread westward along the St. Lawrence and the shores of the Lakes to the valley of the Mississippi. From New Orleans it extended northward along the Atlantic coast and up the valley of the Mississippi, westward through Texas and Mexico to California, south and eastward to Vera Cruz and the West India Islands. From 1834 to 1846 the disease was confined principally to the jungles of the Gangetic delta. Early in the summer of the last-mentioned year the disease aroused itself into unwonted activity and spread with great rapidity over nearly the whole field traversed during the former epidemic, which commenced in 1817 and ended in 1834. It reached this country in December, 1848, and in 1849 it progressed northward, reaching Chicago in April, New York in May, Buffalo in June, and Sandusky in July. Nearly all the intervening towns on the Atlantic coast, and on the banks of the Mississippi River and some of its larger tributaries, were more or less severely visited. The disease was epidemic in the West India Islands in September, and in California in October of the following year. In 1853 it was again epidemic in Europe, and in 1854 in this country, since which time, in the United States, only isolated manifestations of the disease have occurred.

But few, who have not given this disease special study, have any idea of the great mortality which it has occasioned. Without wishing to recapitulate, it may not be amiss to introduce the following statistics of mortality, occurring in a few of the many cholera visitations, for which statistics I am mostly indebted to the labors and researches of others.

During seventeen years immediately succeeding 1817, cholera did not cease to prevail. Of the mortality of the first two or three years no reliable statistics are at hand. In the year 1819 more than 10,000 perished of the disease in the Island of Ceylon. In 1820 it raged terribly in the Birman empire; at Bankok alone 40,000 perished; deaths occurred with such rapidity that it was impossible for the living to bury the dead. In the same year the deaths from cholera in the Island of Java were estimated at 400,000; and at Muscat, on the western coast of the Gulf of Ormis, in 1821, 10,000 perished in ten days. About the same time at Bassora, on the north of the Persian Gulf, 18,000 died in two weeks; and in the vicinity of Shiraz 40,000 fell victims to the disease. In 1823 the cholera raged so terribly in Pekin and Nankin that government authority had to superintend the burials and meet the expenses of interment.

In 1830 the disease was epidemic at Moscow, and 3000 fell victims to it. In 1831 18,000 perished of the disease in Paris. In the same year it destroyed 45,000 of the pilgrims at Mecca, and in Hungary its victims were estimated at 18,000. In 1832 more than 30,000 perished with cholera in the British Islands, and in the same year it was very fatal in this country. In 1848 the deaths from cholera in Great Britain were more than 70,000, and in Russia in the neighborhood of 500,000! In 1849 nearly 4000 died of the disease in New Orleans, and nearly 5000 at St. Louis; in 1850 the latter city suffered even more severely. At Cincinnati, in 1849 and 1850, the mortality from this disease was nearly 6000. In 1849 it occasioned about 400 deaths in the comparatively small town of Sandusky, and in 1850 more than 40,000 fell victims to it on the Island of Jamaica.

These figures, great as they are, give but an imperfect idea of the great mortality which this disease has occasioned. It has been estimated that within the last hundred years, and principally within the last fifty, cholera has occasioned full one hundred millions of deaths!—a number not quite equal to about four times the present entire population of the United States! When we take into account this great mortality; when we consider the fact that the disease has probably become naturalized in the delta of the Mississippi, and is probably destined to new incursions and an increased mortality, anything concerning its history, nature, origin, and cause becomes of paramount importance. It is highly probable that the present year will not pass without witnessing a new incursion: how wide spread and fatal cannot be foretold, but the gloomy records of the past justify the most fearful forebodings. The cholera epidemic is again on its western march, and, probably, ere another winter, it will have reaped its harvest of death in this country.*

Are the manifestations of this disease an inscrutable dispensation of Providence, or may we, if we will, see the silent and expressive finger of the All-wise pointing to an improved sanitary and social condition? Is cholera a necessity of our climate, and of man's social and commercial relations, or is it a preventable difficulty, engrafted upon man's folly, and preventable by his wisdom? These are certainly pertinent inquiries, apologetic at least of my humble efforts toward their solution.

The geographical limitations and isothermal relations of cholera are by no means well defined. Unlike yellow fever and the plague, it may occur in high latitudes, and at an undefined elevation. Prof. Dickson has graphically said: "The malignant Asiatic cholera, like the prophet's cloud, 'at first larger than a man's hand,' has covered with its dark shadow almost the whole of the habitable globe, and swept off millions into the tomb. Arising in Bengal, it extended itself slowly over Eastern India, invaded the vast empire of Russia, striking many parts of Germany, and adding the last bitter drop to the miseries of unhappy Poland. Nor seas, nor deserts, availed to arrest its career. It depopulated the crowded streets of Cairo and Constantinople, and whitened, with the bones of armies of pilgrims, the sandy plains which surround the holy cities of the prophet. England and France, enveloped in all the safeguards that science and art can offer for the protection of man from physical calamity, have enjoyed no exemption, and the waves of the broad Atlantic presented an insufficient barrier. The sea-coast, and the vast interior of our own beloved country, our lakes, and the banks of our majestic rivers, have scarcely ceased of late to mourn its presence; it often reappears, or lingers upon the southwestern portion of our continent, and our cities are depressed with the terrors of its repeated and deeply dreaded invasion. Its victims were multiplied fearfully at Naples and in Palermo, and its mortality, everywhere awfully great, seemed more frightful than ever at the foot of Etna and of Vesuvius."

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* Written in 1858. Fortunately the disease was not epidemic to any considerable extent in this country in 1858 or 1859.

Cholera generally prevails in the summer and autumn months, and is usually a disease of warm climates; it has, however, occasionally occurred in the winter, and once as far north as Moscow. Notwithstanding cholera has done its deadly work upon the burning plains of British India, and in the cool regions of Norway—occasionally far up the sides of the mountains, and oftener down in the more fruitful valleys—there are certain atmospheric conditions usually present. Those conditions are *heat, high dew point, and stagnant air.* It is not necessary that the heat should be absolute, but relative. I wish to impress this idea, that high temperature, and dew point, and stagnant atmosphere can relatively exist as well in Moscow as in Ceylon or Liberia. The Arctic explorers tell us that the relative high temperature of the Northern Ocean is not less oppressive to the traveler, surrounded though he may be with snow and icebergs, than is the *ordinary* temperature of the sunburnt tropics. But more of this further on. There is one fact that should be mentioned in this connection; wherever cholera manifests itself during one epidemic, there, all things the same, it may be expected during its next visitation. The reason for this, I shall attempt to show hereafter.

A disease that has destroyed, on an average, a million of lives annually, for the last hundred years, and may, with unopposing circumstances, continue to do so indefinitely, is not without interest to the profession and the public. If it be a disease that originates without discoverable cause; is propagated in a manner calculated to baffle the united wisdom of the world; whose deadly march and gloomy shadow, seas nor mountains can oppose, nor sanitary cordons ward off, and whose icy touch, fatal almost as the dart of Azrael, cannot be paralyzed, then may we sit down and receive in meekness the dread visitant, as a chastening messenger from an offended God. That an occasional epidemic visitation of cholera, is a necessary part of the Divine economy, I cannot reconcile to my idea of the non-existence of an ultimate evil. That it was an irrevocable part of the Creative design, that a voiceless and invisible plague should emerge from the jungles of India and slowly spread from house to house and city to city, through valleys and over mountains, across lakes and over the ocean,—marking its pathway with millions of corpses, and still other millions of frightened and fleeing fugitives, uniting in one common sorrow all nations and conditions of men,—involves an idea so derogatory to God, that no enlightened mind can for a moment give it assent.

Effects are not usually produced without causes, and it is probable that cholera is no exception to the general rule. If one country escapes the disease while another suffers—if Norfolk is almost depopulated while Richmond, in the same State, is free from the disease—if one street or one house escapes, in an affected district, there are reasons for the exemption in the one case, and the affliction in the other, and these exemptive conditions, it is reasonable to suppose, can be made universal. That cholera is comparatively a recent disease, perhaps no one disputes. If it was unknown to the ancients, and existing now, it must exist by a special dispensation of Providence, or else its operative cause must have relation to the changing conditions of man's physical existence. The relation of the earth to the source of heat and light upon which climatic and atmospheric conditions depend, is comparatively unalterable through centuries; hence, a new disease is presumed to have causative relation to the vicissitudes of man's physical and social conditions. It is all-important to know what those conditions are, and whether or no they be removable. The great mass of mankind are too apt to regard an epidemic, though it drape the earth in mourning and fill the land with new-made graves, as a providential visitation, and not as a legitimate sequence of man's folly preventable by his wisdom. Men and nations are not so unwise as not to put forth means adequate to such an end, if they have firm confidence in the legitimacy of the desired result. In 1848, cholera destroyed perhaps a hundred thousand of British subjects, fifteen thousand of which were taken from the very capital. If Russia should scatter assassins throughout the British provinces, and in one night 100,000 loyal Britons should fall by the hand of the secret foe, is it not to be supposed that every energy, at whatever cost, would be put in requisition to prevent the repetition of the outrage? Be assured that if the British nation had the same confidence in its ability to stay or prevent the ravages of cholera, efforts commensurate with the design would be put in requisition. In our own country too, cholera and yellow fever have destroyed far more lives, perhaps in one year, than have fallen by the hands of a foreign foe since the day we first aspired to an independent national existence.

Having made the above remarks, I now invite the attention of the Society to the conditions upon the presence of which the existence of cholera usually depends, hoping that causative conditions may be discovered and the possibility of their removal be demonstrated. It has been stated that cholera has been developed under all conditions of climate, temperature, elevation, and atmospheric salubriousness. Apparently this is true, but, absolutely at least, the last clause requires confirmation. One thing cannot be denied, though there may be exceptional developments, the home of the disease is in warm climates, in low situations, and upon unhealthy sites. Reference has been made to the localities where the plague and yellow fever make their attacks and repeat their dreaded visitations, and local causes have been sought and found for these periodic onslaughts upon human life and human hopes. He who observes closely will find that cholera has similar local predilections, feeds upon similar elements, and, when its mission is accomplished, retires to similar winter quarters. In the same cities, upon the eastern continent, where plague and yellow fever have brought sorrow to almost every home, there cholera has done its deadliest work. In the New World reference has been made to Havana, Vera Cruz, New Orleans, Norfolk, and other cities, and the causes of insalubrity have been briefly pointed out: it is in these same and similar localities that men have had cause to mourn the ravages of cholera. Hence, the inference is just that these great epidemics have causes almost identical, and preventive measures that will prove effectual in regard to one may be expected to do so in regard to all. It is as impossible, in my judgment, for a village to be decimated by cholera or yellow fever that is not surrounded by or does not contain within itself the noxious elements of disease, as it is for an individual to suffer from primary syphilis who had not come in contact with its specific poison.

In my remarks upon yellow fever, it was affirmed that that disease only made its appearance where the air was poisoned by putrid, decaying, and noxious exhalations from cess-pools, sewers, churchyards, etc., and this remark will equally apply to the disease under consideration. Dr. Barton, of New Orleans, has affirmed that, for the production of cholera, two conditions are necessarily present: first, a certain epidemic influence, so operating upon the system as to produce a constitutional predisposition; and, second, the introduction into the system of a morbific, decomposing matter, which had its origin in local conditions. The first is an atmospheric condition, the exact nature of which is at present unknown, and is probably beyond the control of man; the latter is a noxious exhalation, intimately connected with human existence and social habits, and consequently preventable. Neither of these conditions is alone adequate to the production of cholera, and if one be preventable, the result, so far as this disease is concerned, is the same as though both were. What is this second element? What are the local conditions without the presence of which cholera cannot exist? These are questions of the first importance. The discovery of the means by which small-pox could be prevented was a boon to humanity, in comparison with which the most learned disquisition upon the pathology and treatment of that disease would sink into insignificance. So with the disease under consideration—the cause and the prevention of cholera are subjects of vastly more importance than its pathology and treatment.

First among the local causes of cholera stands *miasm*—a *poisonous exhalation from decomposing animal and excrementitious matter.* It is well known that Dr. Cullen, long ago, observed that the effluvia from putrid animal substances readily produced diarrhœa, and others have confirmed his observation. Is it surprising then that a certain intensity and modification of the causative condition will produce an intensified and modified result? Not at all. It is a generally received opinion that intermittent, remittent, bilious-remittent, and congestive fevers, have a common cause—the differing results or manifestations being due to varying intensity, or collateral modifications of origin. If animal or excrementitious exhalations will develop diarrhœa, it would require only an intensity of cause, superadded to an epidemic predisposing tendency, to produce cholera. That this epidemic influence is inadequate to this end alone, repeated observation has abundantly demonstrated, and in proof on this point the highest authorities upon this subject could be abundantly quoted. Mr. Simons, in his Fifth Annual Report upon the Sanitary Condition of London, says: "The specific migrating power of cholera, (the epidemic influence,) whatever its nature, has the faculty of infecting districts in a manner detrimental to life, only when their atmosphere is fraught with certain products susceptible, under its influence, of undergoing poisonous transformations. * * Through the unpolluted atmosphere of cleanly districts it migrates silently, without a blow: that which it can kindle into poison, lies not there. To the foul, damp breath of low-lying cities, it comes like a spark to powder. Here is contained that which it can swiftly make destructive—soaked into soil, stagnant in water, griming the pavement, tainting the air—the slow rottenness of unremoved excrement, to which the first contact of this foreign ferment brings the occasion of changing, into new and more deadly combinations." Dr. Johnson, in describing those parts of Port Royal in which the cholera was most fatal, says: "Most of the houses have small court-yards attached to them, which are generally the abode of pigs and goats, and are also invariably the depositories of every species of disgusting filth, such as human ordure, as well as other excrementitious matters, stinking fish-guts and putrid slops; in fact, everything is there to be found, excepting cleanliness or pure water. The stench perceivable in the vicinity of some of these localities is at times intolerable. The few inhabitants that do observe anything like decency (there being no public privies) generally resort to the beach facing the sea in front of the battery, in the vicinity of the church. About this spot the night soil is generally deposited. When the sea breeze blows home, this place is directly to the windward of the town." It would not be difficult to multiply descriptive quotations, confirmatory of the fact that in nearly all places where cholera prevails to any considerable extent, there the atmosphere will be found vitiated with poisonous exhalations. While remarking upon yellow fever, I made a tolerably full statement of the sanitary condition of the more important places in which that disease has raged with deadliest effect. It is in the same localities that cholera has raged with the most wide-spread and disastrous results, and to dilate upon miasmatic causatives would be but to recapitulate what has already been said.

Those who advocate that cholera originates only in a specific poison, spreads uninfluenced by terrene conditions, and is altogether beyond human control, may object that there are so many places where filth abounds and noxious effluvia taint the air, that in many places where cholera prevails it is not difficult to show a vitiated atmosphere to be a coexistent condition; and they may, consequently, ask us for proof of a dependent relation between them of cause and effect. This is a more difficult if not an impossible task. I cite a few facts bearing upon this point. In Spanish Town, in 1850 and 1851, cholera was dreadfully fatal. Of the barrack-rooms, Dr. Milroy says: "Nothing can be worse than the construction of these places; they are literally shut boxes over huge pits of ordure, the fluid parts of which soak into the ground, while the solid matter goes on accumulating." Dr. Milroy adds: "The mortality among the well-conditioned class was very limited; it might be counted by units; *whereas that among the mass of the people was by thousands.*"

In 1853 cholera broke out in a limited district in Dublin. The patients all lived near each other, and, "in their immediate vicinity, there was a very large collection, in a yard, of street manure and night soil, collected by carts from the lanes and alleys of the neighboring parts of the city." The balance of the city remained healthy. Instances might be cited in which the disease has confined its ravages to a single ward or street reputed for its filth and nauseous stenches, while the remainder, and salubrious portions of the city, were exempt from the disease, and this same localization has been repeated again and again at each subsequent visitation. For example, "the earliest case of cholera in Chelsea, in 1848, is said to have been in White Hart Court, and there it continued to exist until the end of the epidemic in 1849. The first case in 1854 was in the same place, perhaps also in the same house, for deaths occurred in the same house in both visitations." A writer in the *British and Foreign Medico-Chirurgical Review* for 1857 reports the results of his own observations, which are so confirmatory of the local origin of the disease, that I am disposed to make a rather lengthy quotation. "During the epidemic of 1854, in a portion of the parishes of Chelsea, and of St. Saviour's, and St. George's, Southwark, exclusive of cases in which the notes made at the time of inspection are not explicit, we personally examined into the sanitary state of the houses occupied by 392 families, in whom deaths from cholera had occurred. Out of 2701 persons, 616 had cholera, besides 871 cases of diarrhœa. Four hundred and fifty of the cholera cases proved fatal. The inquiry extended alike to the dwellings of wealthy residents in good streets, as to those of lodgers in the most overcrowded and filthiest alley. Without devoting more space to the subject than we can afford, it would be impossible to convey the evidence in its fullness as it came before us, and tested as it was in every manner that we could think of, but an analysis of the numbers above given shows that the existence of the products of the peculiar decomposition alluded to were evident to the senses at the time of visits in 213 houses. In nineteen of these there were cess-pools situated below the house itself, or in such close proximity thereto that the soil had percolated through into the subsoil below the dwelling. In 220 cases, open privies were either erected against the main wall of the house, or so near to the back entrance as to allow of the emanations from the soil being observable within doors. In seventy-seven instances branch drains of imperfect construction, having direct communication with the common sewer, passed underneath houses; or a foul, open ditch; the main sewer, or a principal branch, in a ruinous condition, was so near the house as to influence its internal atmosphere. In ninety-two of the houses were untrapped sinks or drains, connected directly with the street sewer, by which the foul sewer exhalations were conveyed to the internal atmosphere. Of the entire number of houses, in only thirty-three were no sources of this atmospheric contamination detected. Not to dilate further upon the precise manner in which the air breathed by the inmates became corrupted with this foul impurity, let it suffice that persons appeared to suffer in proportion to the contamination of the air they breathed by the 'privy odor,' and that immunity from this appeared to secure immunity from cholera."

It is repeatedly urged, in opposition to this view of the origin of cholera, that the disease frequently prevails in localities where no tangible cause for insalubriousness is discoverable. This fact does not necessarily invalidate the argument; for local causes often exist in intensity unsuspected by the superficial observer. Those who have searched closely into this matter have been surprised to find poisonous exhalations, in concentrated form, in houses of the upper classes, and in apparently salubrious portions of a city. Again, a prevailing wind may waft away and so concentrate a poison, as to make it operate somewhat remote from the originating conditions. I know, that in all systematic works that have fallen under my observation, it is asserted that the attacks and spread of cholera are uninfluenced by winds. But numerous observed instances, in opposition to this idea, could easily be quoted. In 1849, cholera broke out in the Baltimore alms-house, and ninety-nine died of the disease. The alms-house is placed in an apparently healthy locality, at a distance from the city. At the north of the alms-house was a waste piece of land, of cess-pool soil, which received the filth from the pig-sty, the draining from the privies, and all the filth of the locality. Dr. Buckland says this place was "one putrid and pestilential mass, capable of generating, under the ardent rays of a midsummer sun, the most poisonous and deadly exhalations." The wind set steadily from the north during the epidemic; when the wind changed, so as to waft the exhalations from this abode of filth in another direction, the epidemic ceased at the alms-house. At St. Louis, in 1849, the disease changed locality at every change of the wind.

In my investigations upon the subject of cholera, I had collected a vast array of facts,—all going to show the intimate connection between poisonous exhalations and cholera manifestations. These facts cannot be used, without protracting this paper greatly beyond the indulgence of this society. The above few, of the many facts at command, have been selected, not because of superior force, but because of brevity of statement.

Of high temperature, high dew point, and lowness of site, as collateral agencies in the development of cholera, much might be said. Their influence is wholly operative in enervating the constitution, and in intensifying the effluvial poison. The remarks upon these points, while speaking of yellow fever, are equally applicable here; and want of space will not justify their repetition.

In what respect does an exhalation that will produce cholora differ from that which will develop ague or the yellow fever? This is a pertinent and interesting question, and should not be wholly ignored in this investigation. Intermittent fever is supposed to have for its cause an exhalation, or miasm, derivable from vegetable decomposition. While remarking upon yellow fever, an effort was made to show that that disease had, for its special cause, an exhalation derivable from the putrefactive process, in which animal decomposition was largely involved. It is the opinion of many close observers, that cholera is the morbific result of an exhalation from excrementitious products. This opinion is forcibly urged by a writer in the *British and Foreign Medico-Chirurgical Review* for January, 1851, and January, 1857. Two or three of the thousand facts that might be urged in support of this idea, will here be introduced. Many years ago, and before the first visitation of cholera in England, at a boarding-school, at Clapham, a foul cess-pool was opened, and its contents spread over the garden adjoining the play-ground. Within two or three days, twenty-two boys were seized with alarming diarrhœa and vomiting, with subsultus of the muscles of the arms, and excessive prostration of strength: two died. This case illustrates forcibly the influence of exhalations from human excrements, at a time when no cholera influence was modifying results. Gaimersheim has been dreadfully visited with cholera. Water is so scarce in the town, that cess-pool water is carefully collected in a pool, and preserved for the extinction of fires. Cholera raged only in the vicinity of this pool: nearly one-half of such residents had the disease; and of those attacked nearly one-half died. In Bethnal Green Parish, London, in a space of 400 yards by 150, in fifteen days, in 1849, 211 deaths occurred from cholera. "Among the principal causes of filth, Dr. Gaven places the accumulation of ordure, which appears never to have been removed from the premises; so that, in process of time, the back-yards, in several localities, have been so raised as to be nearly on a level with what might be termed the first floors of the houses." In the west-end of London, "the dwellings, or rather hovels, in which the people live, are unsurpassed in nastiness by anything known in Ireland. The streets, courts, alleys, and yards are without a drop of clear water; there are no sewers in any part of the locality; and all the drainings of the pig-sties and privies are left on the surface, close to the very doors and windows of the houses, or flow lazily into a large stagnant pond, called the 'Ocean,' which is covered with a filthy slime, and is continually bubbling with putrescent gas." The result is, that, during every epidemic of cholera, this is one of the centres of its desolation. Additional facts, of a forcible character, are abundant, to show the influence of excremental exhalations in the production and localization of cholera; but their quotation is not consistent with the scope of this paper. Suffice it to say that, in many instances, privy vaults and cess-pools have been found to have leaked their nauseous contents into wells supplying water to many families. To such families, in many instances, the disease has been wholly confined, or most alarmingly fatal. In other instances, the outlet of sewers, because of low water, have been exposed, and the wind, when blowing in certain directions, would drive the noxious gases into dwellings, in remote and perhaps healthy parts of the town. In such cases, surprising fatality has occurred, under circumstances, at the time perhaps, entirely inexplicable. Still other cases have occurred, where sewers, being dammed up, have regurgitated the foul contents, which they were designed to conduct away, into the palatial homes of the proud and affluent, thus subjecting them to the disease, as well as the poor and lowly, whose hovels are surrounded with the nidus of the epidemic. I beg leave to conclude this part of my subject with a pertinent quotation from the January number of the

British and Foreign Medico-Chirurgical Review for 1851: "There is certainly not a more frequent or more perilous source of mischief, during the prevalence of epidemic disease, than foul and obstructed drains; and it is, unfortunately, the fact, that the construction of these works has hitherto been so very faulty, that in many parts of this metropolis, as well as in every town and city throughout the kingdom, instead of being conduits for the removal of decaying refuse, they are no better than elongated cess-pools, which detain their stagnant contents, and regurgitate their noxious effluvia into the interior of the houses with which they are connected."

To this view of the nature of the miasm which develops cholera, it may be objected, that the disease has occasionally occurred in armies upon the field, as well as among our over-the-land emigrants to California, where fecal exhalations must be quite inconsiderable. It may not be easy to meet this objection satisfactorily; though, to my mind, it has but little force. It is not improbable that many of such epidemic visitations have not been cholera at all. Epidemic diarrhœa or dysentery has undoubtedly sometimes been mistaken for cholera. Exposure to the hot sun by day, in an almost uninhabited region rich in decaying vegetation, and also exposure to the damp, cold, and miasmatic air of an open encampment by night, with deficient or unhealthy nourishment, are conditions well calculated to develop diarrhœa and dysentery in their worst forms. In 1850, cholera was reported to have done deadly work among the California emigrants. Assistant Surgeon Wm. Hammond, Jr., at Fort Kearney, wrote: "The California emigrants, between Forts Leavenworth and Laramie, have suffered a good deal from a disease, called by them cholera, and which, in its somewhat rapid and fatal course, very much resembles that malady; but which was nothing more than an acute form of diarrhœa, brought on by excessive imprudence in diet, and exposure to many hardships on the plains, to which they were entirely unaccustomed at home. I have seen a great many cases among the emigrants, and I do not think there has been any true Asiatic cholera upon the plains this summer." (*Statistical Reports of the Sickness and Mortality in the Army of the United States*, p. 78.)

It is a little unfair to deny the existence of cholera in localities where we cannot find what seems to us a true explanation for its appearance; and, however correct this denial may be, I am indisposed to take advantage of it. There is another explanation that suits my purpose better. It is probable that the exhalations from the skin and lungs do not differ materially, in nature, from the excrements from the bowels; certain is it, that confined air can be rendered as deadly poisonous by such exhalations as the foulest cess-pool in London. In proof, I would again instance the

English prisoners confined for a night in the Black Hole of Calcutta: of the 146, but 23 lived to see the morning! Such effects have the skin and lung exhalations on cholera manifestations, that several close observers have supposed that over-crowding was one of the most effectual of local causes. At a work-house in Taunton, containing 276 inmates, who were crowded into a badly ventilated space, scarcely averaging 80 cubic feet of air to each, in 1848, nearly all were attacked with cholera, and 60 died; while the inhabitants of the town were nearly if not entirely unaffected.

At a certain establishment in London, where 1400 pauper children were kept with an average space of 140 cubic feet for each, when no cholera was in the neighborhood, and it was disputed whether there were any cases in town, 300 were suddenly smitten, and 180 died! "I am convinced," says Dr. Clark, of London, "that wherever large numbers of human beings are congregated together, and who eat, drink, and sleep in the same apartment, as in the case with young and old in work-houses,—there the inmates are most liable to suffer."

At Juggernaut, it is an annual visitant. "The town of Pooree contains 35,000 inhabitants, and the number of pilgrims sometimes amounts to 150,000. The inhabitants are usually quite healthy before the occurrence of the festival, which takes place in June or July; but immediately on the arrival of the pilgrims, and when the lodging-houses are literally crammed with inmates, cholera suddenly breaks out, and in the space of a few days hundreds are cut off by it. This is not an occasional or incidental occurrence, it is an invariable one; and the disease, which has thus been generated, as suddenly disappears on the dispersion of the crowd, a few isolated cases only occurring for two or three days after the departure of the pilgrims." It may be asked, what these facts have to do with the point under consideration? I answer, much. Emigrants traveling in companies by land, and armies on the field, and pilgrims en route to and from the Holy City, sleep compactly in their tents, with a space often less than fifty cubic feet to the individual, and their alvine and urinary evacuations are deposited near at hand upon the surface of the earth, and there reek in the air perhaps of a tropical clime. It has been objected, by at least one high authority, that cholera cannot have a miasmatic origin, because it frequently attacks ships at sea. It will be readily seen that this objection has no force, for that peculiar miasmatic poison which we have been considering can be developed on shipboard as well as on land. Many instances directly in point could be introduced, did space permit and occasion justify. I invite your attention only to the Black Sea fleet. In 1854, cholera broke out among the soldiers on shipboard, and was exclusively confined to screw line-of-battle ships. These, Dr. Milroy says, were in several respects defective; "the amount of space, for both sick and well, is too limited; the ventilation is most imperfect, the air of the sick-bay in particular being vitiated by the faulty arrangements of the water-closets and the offensive effluvia arising from the men's latrine." Mr. Rees, surgeon of the *Britannia*, attributes the mortality on board that vessel to the crowded state of the middle deck, to the want of adequate ventilation, and to the accumulation of the foul discharges from the stomach and bowels of the sick.

I have perhaps wearied your patience upon the terrene relations of cholera, but be assured there are but few subjects of more importance. The immortal Jenner discovered a means by which that loathsome disease, small-pox, could be almost, if not entirely, annihilated. The ravages of small-pox have probably never equaled the devastations of cholera; and yet it is the opinion of many of the more observing physicians, that the latter named disease can, if not so cheaply at least as effectually, be prevented.

Is cholera a contagious disease? This is an important question, and should be investigated with the utmost candor, and with strict regard to facts. Unprofessional persons are prone to believe in its contagiousness, and almost every town that has suffered from cholera has witnessed the inhuman results of such a belief. The homeless have been denied a shelter and a couch amid their fellows—with no soothing hand or affectionate word to minister to their dying agonies. Parents have deserted their children, and children their aged parents; husbands their wives, and wives their stricken husbands; and dearest friends have fled from the house of sorrow and of death. If the disease be not contagious, the world should know and be convinced of it, that such inhumanities should not be repeated at each new attack.

A writer in the *New American Cyclopædia* says: "Physicians even were once divided in their opinions on this point, but probably at the present time very few could be found who would maintain its contagiousness." "The whole history of the progress of cholera for the last forty years shows conclusively that, though endemic and epidemic, *it is not a contagious disease.*" There are other high authorities that express an opposite opinion with equal positiveness. Prof. Dickson, in his *Elements of Medicine*, says: "The proofs of this communicability are abundant." Again, "An attack of cholera can only be procured among subjects laboring under the pestilence." Dr. Dickson also says that there seems to him as much evidence of the contagious character of this malady as there is of measles, scarlet fever, hooping-cough, etc. I might quote many high authorities who are enthusiastic advocates of the contagious nature of cholera, but my space will not justify extended reference—two or three must suffice. Dr. Becker, of Berlin, says: "I am a most decided contagionist, and it is the force of facts which has made me so." The members of the Bombay Board conclude their report by saying: "It appears to us incontrovertible, that this disease is capable of being transported from one place to another, as in cases of ordinary contagion or infection, and also to possess the power of propagating itself by the same means that acknowledged contagions do." Dr. Copland, in his *Dictionary of Medicine*, enters into the discussion of this subject with much warmth and at considerable length. I had marked several passages for quotation, but will confine myself to one. He says: "It may be briefly premised that this disease is *never produced* without the presence of a certain leaven, or morbific matter, which, *emanating from the bodies of the affected*, and floating in the air, is respired by those about to be attacked. This is the clear and only inference connected with its transmission that can be deduced from the body of evidence now placed before the reader. Those who argue against its transmissible nature cannot show, since the irruption of the pestilence in India, down to its arrival in this country, and transmission thence to America, a *single instance of its appearance in any place without the previous communication with an infected place or person, of a nature to propagate the malady*." These are, indeed, high authorities, and their opinions are emphatically stated. It would not be difficult to give opposing opinions from equally high authorities, but opinions amount to but little without the facts upon which they are based, and they are consequently withheld. I have carefully examined all the evidence within my reach, and honestly confess I see no good reasons for considering cholera a contagious disease, in the sense in which small-pox, measles, etc. are contagious. It would give me pleasure to enter into this discussion at length, but this is by no means the appropriate time or place; with simply a thought or two I propose to quit the subject. While upon the subject of yellow fever, I gave a few reasons for considering that disease non-contagious. The arguments there adduced apply with equal force to cholera, and their repetition here would be a useless waste of time. The assertion of Dr. Copland would seem to have weight were it true; but, unfortunately for his dogmatic assertion, it is untrue. Cholera has so repeatedly manifested itself in this country, when it could not be traced to previous communication with affected persons, that space cannot be given here for their repetition.

It may be admitted that cholera has frequently broken out soon after the arrival of vessels from a foreign port with sick on board. But such a fact lacks several requisites to make it conclusive. If cholera broke out at all, it could not well be otherwise than under circumstances as above. The commercial relations between foreign ports and our principal sea-port towns are so brisk, and arrivals so frequent, that any cholera attack at

New York or New Orleans, would necessarily be soon after such an arrival. And, further, at the times of the year when cholera usually makes its first attacks, scarcely a vessel arrives from a foreign port without bad cases of diarrhœa or dysentery on board, that, with people excited with the dread of cholera, would readily be dignified with the name of the latter. There are those who suppose the weekly quarterings of the moon control all the changes in the weather; and whenever a remarkable change takes place, with pride and a fancied evidence of proof, they will refer us to the fact that it was within three days, one way or the other, of such reputed quarterings! Such men forget that the moon's changes are as great one day as another, and our contagionists forget that, in our principal ports, vessels are of frequent arrival. If this argument be objected to as unfair, the following upon this point is of undeniable force. It is not enough for the contagionists to show that cholera frequently breaks out after the arrival of a suspected vessel, but they must show that there was *actual communication* between the sick on shipboard and those attacked on land. Such communication may be inferred, and so all subsequences may be inferred to be consequences, but without positive proof such inferences are valueless. All the sources of information at my command, which, I grant, are limited, I have carefully examined with reference to this point, and must confess I was not disappointed in the result. Probably in nine-tenths of the instances, as above referred to as proof of contagion, no such communication is shown. On the other hand, where cholera patients have been brought to an unaffected town, and cholera has soon after appeared among the residents, in many instances it is not difficult to show that no communication between the sick and the new attacks has been held. In such cases the ignorant suspect contagion, but the observing physician looks for a local cause, confident that the disease would have manifested itself just as soon had no cases been imported. The contagionists tell us that the attacks are largely among those in communication with the disease. Supposing this to be so, it lacks an essential element to constitute proof of their position. The first attacks are where the local causes are most concentrated, and if persons going from a healthy locality to minister to the sick subsequently sicken, it is quite as reasonable to suppose that it is *because they have been exposed to the same local causes*, as to suppose it is because of the communicability of the disease. To take the disease in a poisoned house or infected district, it should be remembered is no proof of communicability from person to person. If a man should take the ague in a locality where the elements necessary for the production of that disease existed in their intensity, and his wife and brother from the Green Mountains, in Vermont, should go to minister to his wants, both, in a little time, might find themselves prostrated with the same disease—other friends might follow with like result, and the disease be pronounced contagious; and yet every physician would pronounce their reasoning false and their conclusions incorrect. Should a man take cholera at Mobile and be immediately removed to an airy farm-house on Spring Hill, in the rear of the town, where no source of noxious exhalations were to be found, and the inmates of his new home should be stricken down, never having been away to suspicious localities, such a case would be troublesome proof of contagion. But, so far as I know, no such case is on record. Small-pox, measles, etc. can be communicated from person to person, anywhere and under any circumstances short of previous protection; not so with cholera or yellow fever. But I must not discuss this subject further.

The above remarks are made in the full consciousness of the responsibility of advocating a doctrine, which if it be an error and acted upon, will cost the sacrifice of many valuable lives. It is only because of my firm conviction of the truth of the local origin of the disease and of the possibility of its prevention, that I urge these opinions. If the disease can only be received by communication with those already suffering, then, in times when the disease is prevailing, an efficient quarantine regulation will save the inmates of a city from danger and death. But if the disease is not contagious, but is only produced by the action of the local cause in conjunction with the epidemic influence, then quarantine regulations are of but little moment. In my judgment, far too much time and money has been wasted on quarantine regulations. If, in New York or Philadelphia, requisite attention is paid to cleanliness—if all the filth is removed and the sources of noxious exhalations suppressed; if cess-pools are cleansed and sewers are kept in working order; if all privy vaults are properly connected with sewers, properly arranged and cleansed; and if all noxious exhalations are corrected by proper disinfectants wherever discovered, there need be no fear of cholera, though no quarantine regulations are observed. But if filth and excrementitious products are allowed to accumulate in cellars, by-streets, and back-yards; if sewers are allowed to become obstructed, and privy vaults and cess-pools to send up their noxious exhalations to poison the hot and stagnant air, when cholera influence is abroad in the land, no quarantine cordon, however efficient, will prevent an irruption of the disease. But can these sanitary regulations be put in requisiton? Yes, and should be. The Registrar-General of London, speaking of the dreadful mortality of Salisbury, says: "Any attempt to improve the general drainage of Salisbury would be impracticable; *it would interfere with too many interests.*" It is my opinion that the Registrar-General has over-rated the selfishness of Salisbury. Any nation that can overbear all interests when a railroad is to be built, or command almost any amount of men or money to repel a foreign foe, can, when she is impressed with the necessity and has confidence in the utility, effect such sanitary regulations as are necessary to save 50,000 of her loyal subjects annually! The public is apathetic on all subjects where the pecuniary benefits are not tangible to the least observing, and it is only by an earnest and unyielding effort on the part of the medical profession that proper sanitary regulations can be enforced.

It was not my intention in this report to remark upon the treatment of any epidemic or endemic in which my personal experience was not sufficiently large to warrant a confident expression. If the cause of the disease is as above stated, it will be readily perceived that sanitary regulations and the free use of disinfectants, as preventive measures, will doubtless be of more service than any treatment. It would also seem reasonable to suppose that the administration of chlorine would form a part of all judicious medication. In this connection it might be observed that Dr. Mann, of Clerkenwell, exhibited chlorine water in nearly one hundred cases with a loss of only two patients.

When this report was commenced, the design was to continue it until the various diseases ranked under the head of epidemics and endemics had been considered. From this stage on, it was designed to make the *treatment*, of the respective diseases considered, an important feature in the report. The ultimatum of the design was a work upon epidemic and endemic diseases, of which the two papers now published were but the initiatory. My design having been interrupted by unforeseen circumstances, and my time now entirely occupied by other duties, I shall be compelled, at least for a time, to postpone its completion.

ART. III.—*Turkey from a Medical point of View.* By W. GOODELL, M.D., member of the Imperial Society of Medicine at Constantinople.

ALTHOUGH the justly distinguished names of Rhazes, Avicenna, and Lockman are familiar as household words to the Mohammedan, yet the Turks, who cheerfully adopted the religion as well as the literature of the Saracens, when the Ottoman Empire absorbed the conquests of the Caliphs, seem in nowise to have encouraged the study of the medical or surgical sciences which flourished so brilliantly among the Arabians in the ninth and tenth centuries. In place of advancing, they have retrograded to the low ebb of the dark ages, and, as in that period, the remedial art is monopolized by the Jewish leech, and by strolling mountebanks and juggling impostors. In the larger sea-ports, where civilization and polished manners are aimed at, there are many very talented physicians, whom political troubles, or a spirit of adventure, have driven to the East; and they deservedly rank high in the esteem of the more enlightened inhabitants. But in the vast majority of cases, either native empirics are employed, or else Greek and Italian apothecaries, who, too ambitious to limit their sphere of usefulness to the mortar and pestle, retail the well-conned prescriptions of the more regular practitioner.

In the palmy days of the Janizaries, military surgery was not a whit better. After a gunshot wound, there was no caviling about the niceties of shock and reaction, but a council of officers determined the necessity of an operation, and an amputation depended upon the decision of the chaplain; consequently, most of the wounded perished; indeed, it is a notorious fact that even after disastrous wars, no mutilated warriors encumbered the finances of the state. At length the Turkish government, becoming keenly alive to the importance of educated attendants on their armies, established in Constantinople, about thirty years ago, a university of medicine, similar to those of Europe. Richly endowed, it not only gives gratuitous instruction to about five hundred youths of all religions and nationalities, but each student, upon his entrance, receives a military rank with corresponding rations; which are increased to those of a higher appointment at the end of the course, when he is bound to serve five years in the army. The course of instruction cannot be the most thorough, especially since the knowledge of anatomy must be derived from the study of manikins and of the inferior animals. The Koran does not sanction human dissections, assigning as a reason that contact with a dead body renders a Mohammedan unclean, and that the soul does not forsake the body immediately after death, but lingers until the moment of interment. Hence, the corpse is hurried to the grave as rapidly as the bearers can go, and post-mortem investigations are popularly invested with all the horrors of human vivisections. Recently, the authorities have connived at the yearly dissection of two or three negro galley-slaves; but we have met graduates of ten years standing who had never examined the interior of the human frame, and whose topographical ignorance of anatomy would insure a flogging to the pupils of one of our public schools. The occupants of the various chairs of this institution, with some honorable exceptions, are ubiquitous Greeks and Armenians of no mark, whom successful intrigue or fortunate ties of consanguinity have placed in these lucrative positions. The dean of the faculty rejoices in the soubriquet of head physician, a hereditary title which does not necessitate any knowledge of medicine; the present incumbent not knowing the difference between the pons Varolii and the pons asinorum.

During the Crimean war, a royal *firman*, or letters-patent, granted a charter to the Imperial Society of Medicine, at Constantinople, and endowed it with a yearly sum of two thousand dollars. The resident members, numbering about one hundred and twenty, are elected by ballot, upon the presentation of a thesis, which must meet the unanimous approval of a committee appointed for that purpose. This society deserves the highest encomium, and, although its meetings are held weekly, the attendance is better than that of any similar institution of this city. Its library and pathological museum are rapidly increasing; it supports a reading-room which is open every day to members, and publishes a very excellent monthly gazette, the editors of which are elected every six months. The debates, held usually in the French language, are of a most instructive and interesting character, inasmuch as disputants of different nationalities, and consequently disciples of every known European school, alternately defend and challenge the doctrines of rival teachers.

Although the marked improvement in the education of the upper classes of Turks impels them to seek the advice of educated physicians, yet, whenever the disease is one of doubt, or unusually protracted, there is an instinctive tendency to call in the impudent quack, who deals in nostrums or incantations, according to the religious or secular character he prefers to assume. Even the Sultan, who may be considered as a fair type of the liberal Mohammedan, is not free from this foible, and rarely employs the services of his seven Christian court-physicians, although each is obliged in turn to spend twenty-four hours of every week within the walls of the palace. Among the score of empirics of every sex and sect, who hang about the precincts of the seraglio, there are two or three who rejoice in an ephemeral pre-eminence, which they retain so long as their remedies meet with success. These may more properly be called the medical attendants of the Sultan.

At one time, Abdul-Mejid conceived a great attachment to an Austrian physician, whom he consulted on all occasions, but whom he was ultimately compelled to dismiss into honorable exile with the rank of ambassador to a foreign court. For the jealous fears of pashas and chief dignitaries could brook no favorite, who might prove a foreign spy, or successfully expose their intrigues to the royal ear. Shortly after this occurrence, the Sultan, while conning over the Koran, casually discovered a defect in the vision of one eye. Courage is not a characteristic of the commander of the faithful, and in great dismay he sent for one of these empirics, who, either not being familiar with optics, or more probably wishing to make capital, gravely shook his head and recommended certain collyria and the application of leeches. This prognosis was quite sufficient to upset the royal patient; he faithfully commenced the treatment, but experiencing no relief, in great fright telegraphed to Turin for the banished physician.

The latter hastened to Constantinople in a steamboat expressly chartered for the emergency, and, detecting at a glance the nature of the affection, satisfactorily proved to his master that one of his eyes had become more presbyoptic than the other. The treatment consisted simply in the substitution of a more powerful lens, while a splendid city residence was the reward of the fortunate oculist.

Upon another occasion, the aristocratic nerves of his majesty were cruelly unstrung by the vulgar twinges of a toothache; which, imitating the example of many a rebellious pasha, traitorously entrenched itself within a molar, and refused to capitulate to the innumerable ptisans, fomentations, nostrums, spells and incantations of the whole empirical and non-empirical faculty. Spurning the tears of the Sultanas, and the entreaties of all the favorite *Odaliques* of the *harem*, the royal sufferer sleeplessly paced his ancestral halls for several days and nights, before he could screw up his courage to the pulling point. But, to the dismay of the chamberlain, in all Stambul not a barber or dentist, for love of money or reputation, was found so disloyal as to aspire to the *crown* of his imperial sovereign. American dentists may smile at the pusillanimity of their Oriental brethren, but let them remember that any accident in the extraction of a royal tooth, whether fracture, delay, or any additional pain, might consign the bold operator to the bastinado, or to the tender mercies of the bowstring. At last, an obscure Jew, who had never looked higher than the jaws of his Hebrew customers, was induced to risk his heels and his neck in the dental encounter. Thrice prostrating himself, he entreated the Sultan to show his slave the offending molar. Quick as thought the forceps were applied, and immediately the Jew fell down, with a piercing shriek, at the feet of his master, in a well-assumed fit of epileptic convulsions. Up jumped the Sultan from his throne, forgetting, in his terror, his toothache, his dignity, and the pain of the extraction, and ordered his pages to bring cordials and water for the unfortunate dentist. The wily Jew, perceiving that a hydropathic treatment was imminent, and that this buffoonery had produced the desired effect of distracting the royal attention, now convalesced with great promptness, triumphantly exhibiting the tooth to the astonished monarch and courtiers. It is hardly necessary to add, that not only was the integrity of his gluteal fascia respected, but Israel went forth from the palace, even unto his kindred, with shekels of gold and shekels of silver.

Two years ago, the Sultan promised himself the pleasure of an extensive trip to all the principal sea-ports of his empire, and preparations were accordingly made, on a scale sufficiently vast for a regular campaign. Neptune, however, proved too staunch a republican to respect the royal stomach, and the descendant of the Caliphs ignominiously beat a retreat to the more obsequious terra-firma of his palace, after remaining in the miasmatic City of Salonica just long enough to acquire a very uncourtly ague. The germs of the disease remained in abeyance, until a tremendous cannonading and pyrotechnic display announced his safe arrival at the metropolis, after a week's absence. That same night, at an hour when all good Mussulmans should be dreaming of bright-eyed houris, an Italian court-physician, who happened to be on duty in the palace, was hastily summoned to quiet the gesticulating limbs of the royal traveler. In spite of the plebeian shakings, rivaling those of this unhappy monarch's still more unhappy ancestor, Bajazet, in his iron cage, our worthy confrere entirely mistook the case. To use a mild expression, he addressed his remedies to the phenomena resulting from an over-dose of champagne; an interdicted beverage which backsliding majesty had freely imbibed, in gratitude for his escape from the gastric eccentricities of the Propontis, and for which he evinces the same partiality that characterized his late brother of Prussia. By good luck, the disease proved a tertian; hence, in spite of the formidable attack of the previous night, the following day found the patient so much improved, that he dismissed his medical attendant with compliments and presents. Four and twenty hours had hardly elapsed, before the court was thrown into confusion by the recurrence of the same train of symptoms. Alas! for the credit of the profession by way of querulous reprisal, an old woman, who enjoyed the reputation of curing the Sultan, in his boyhood, of the small-pox, now ministered to his wants. Knowing her liege lord was a king at the trencher, and consequently attributing the derangement to a postprandial fit of indigestion, she prescribed an aperient, and with her own matronly hands, for "nice customs courtesy to kings," decorously introduced a clyster into the royal person.

Praise be to Allah! the sun dawned on the turban of a convalescent monarch. Quackdom was in its glory. In the first blush of gratitude a pension was settled on the enchantress, while she gathered a rich harvest of Cashmere shawls and jewels from the fair inmates of the palace. By the beard of the thrice blessed prophet, peace to his ashes! again the nocturnal visitor uncourteously shook the royal couch. This time Sultanas, eunuchs, chamberlains, and pages hurried to and fro in the greatest confusion and dismay. Messengers were dispatched for the Grand Mufti, with his formidable train of ecclesiastics, while the whole body politic of cabinet ministers hastened to assemble. After the usual number of pipes and cups of coffee, salaams, pious invocations and quotations, with which every Turk prefaces any important business, the balance of this solemn conclave oscillated now to the partisans of some renowned charlatan, anon to the patrons of the more legitimate art, until it happily depended in favor of science. A well-known Greek physician assumed the treatment, who, to make a long story no longer, boldly unmasked the paludal demon and exorcised it with eighteen grains of quinine.

Fabulous were the rewards of this fortunate conjurer. A noble city mansion, a charming suburban retreat, and a lucrative sinecure evinced the regal gratitude; while, according to Oriental etiquette, the pashas and high functionaries measured their rank by a corresponding value in their gifts to the "man whom the king delighted to honor." The most strait-laced philosophy will not keep down a sigh, when the writer of this article recollects that he was not the dispenser of this scruple of the antiperiodic. A plague on history! it makes us poor plodding mortals envious of our Greek brethren, who have ever been lucky dogs, where good fees are concerned. In all ancient lore, who can find that an obolus, or even an Attic drachma was ever slipped into the expectant palm of an Athenian physician? Such mites were piously consecrated to old Charon's toll, or might secure a back seat in the amphitheatre. Æsculapius undoubtedly set up his chariot and six, and was not only transported from his chair on earth, to a more onerous one among the gods, but received the rich fee of Homeric praise—world-renowned hexameters which we would willingly exchange for a good sterling ante-mortem quid pro quo. Practical Podalirius, "offspring of the healing god," father of phlebotomy, breathes his vows and opens a vein at the same time; and, after this successful venesection, pockets a whole province from the king of Caria and the hand of his daughter to boot. Hippocrates was both aureated and laureated by appreciative Athenians; had his likeness done, not in distemper as was most natural, but in virgin gold by his solid patients of Argos, and had the posthumous honor of temples and altars erected to his memory. Six centuries B.C., enviable Mr. Damocedes, surgeon in ordinary to King Polycrates, and consulting physician extraordinary of all classic valetudinarians, staggers home under the weight of two talents of gold, in exchange for the medical talents he had lavished on the tyrant of Samos; while Darius and his queen, Atossa, without being dunned by a collector, lavished on the same lucky gentleman gifts, honors, and captives innumerable. Precisely as many centuries after the Christian era, Chosroes, a famous king of Persia, grateful for the heroic doses of Stephen of Edessa, rewards that rank abolitionist with the manumission of three thousand slaves. Eheu me miserum! Why can we not trace our genealogy perpendicularly from Cecrops, or legitimately adopt the heraldic device of the Argonautic hero?

But to return from a long digression; the empirics form the vast majority of the medical body, each of whom devotes himself to a specialty, which is hereditary in the family; the father initiating his sons in the mysteries of his craft, and transmitting to his heirs all the secrets appertaining to it. Fractures and dislocations, genito-urinary diseases, hernias, jaundice, epilepsy, etc., are the monopolies of as many different families. The Jews and barbers, who bleed, cup, leech, and extract teeth in addition to their tonsorial duties, are the only general practitioners. They dabble with herbs and simples in the incipient stage of every disease, until alarmed friends apply either to the European physician or empirical specialist; although, as a general rule, the former is considered the dernier ressort, and gains the credit either of the death or the cure. The specialists resort to the most ingenious shifts to inspire confidence in their patients and to disguise their remedies. One gray-bearded, green-turbaned sinner rejoices in being the first oculist of Constantinople. Seated in his box of an office, six feet square, in the most crowded portion of the bazaars, and where every passer-by can witness all proceedings, he prefaces each operation with a long prayer, and administers extreme unction to the golden needle with which he depresses the lens. In connection with this subject, let us not forget a nomadic family of veterinary oculists, who have astonished the intelligent European residents by their success in operating on the cataract of the horse. Arming a curved needle with a stout thread, saturated in some secret liquid, and muttering some unintelligible words, they pass it completely through the lens, leaving the ligature to act as a seton for several hours. We have been assured by many gentlemen, who witnessed this operation in their own stables, that the results were most gratifying.

To appreciate the tricks of those jugglers who deal in spells, some knowledge of the composition of Turkish ink will be necessary. The coloring substance is lampblack, which is thickened and rendered adhesive by gum-arabic. The paper employed is thick and enameled; hence, the characters formed by so viscid a fluid do not readily dry, and every Eastern scribe resorts by necessity as well as by taste to highly-colored sands, the most popular of which are brass-filings and fragments of gold-leaf, thickly sprinkled on, and afterward polished with the smooth convexity of the cypræa. Now the toothache is successfully consigned to the skill of Mohammedan priests, who circumscribe the seat of pain by a circle drawn in an ink, saturated most probably with morphine; within this circumference cabalistic characters are traced, which are eventually to be washed off and swallowed. To the great scandal of the profession in Smyrna, all obstinate cases of intermittent fever, which resisted a regular treatment, resorted successfully to the den of an old *dervish*, a sort of Mohammedan monk, who professed to deal in nothing but incantation. Curious to unfold the mystery, a gentleman, assuming a most unmitigated ague, consulted this pious quack, who, after gravely chanting some stanzas from the Koran, wrote down some well-sanded extracts, from the same holy authority, upon separate slips of paper; ordering each to be placed in a vessel of water over night, and the contents to be drank during the day. It is needless to add that, upon chemical analysis, the sand of our medical caligraphist was found to consist of pure arsenic. In like manner fumigations of cinnabar, and of other mercurial preparations, are adroitly administered under the guise of a voluminous prayer or prolonged invocations. This is a valuable hint which we throw out gratuitously for the consideration of our more ethereal brethren. To the Ozena of the spiritualist or to a recalcitrant node, how efficacious might prove a long message from the shade of the departed Galen, or the ghostly communication from some defunct Ricord!

Another class of empirics, ignoring a religious character, sneer at the divine afflatus, and in their prescriptions confine themselves to whatever is studiedly loathsome. In one case of an enormous cancer of the hip, we found our patient swallowing boluses, whose ingredients somewhat plagiarized the witches' broth in Macbeth, and were as follows:—

Powdered human skull;
Powdered dog's heart;
Dried camel's dung;
Powdered cones of the funereal cypress;
Crude antimony;
Urina virginæ. Q. s.

By the way, this last named rare and precious elixir enjoys a high reputation for curing inflamed eyes, and is as intrepidly taken internally for all hepatic complaints as Congress or Seltzer water. But to return to our patient; on alternate days, the palpitating bodies of ground-rats, eviscerated while alive, and frogs reduced to a pulp in a mortar, were faithfully applied as poultices. In a scientific point of view, this case presented an unusual feature of interest, which we have only observed in one other person, who was dying from hepatic and uterine cancer. A few weeks before death, the whole system seemed so impregnated with the malignant virus that there appeared all over the body hundreds of tumors, from the size of a shot to that of a large walnut, resembling schirrus in hardness and rugosity.

Next come a numerous body of vernal quacks, who, indulgent to popular prejudices, order a venesection in the spring of the year, and prescribe purges and decoctions of frogs and snakes, to eliminate all peccant elements, which appear to hibernate like beasts of prey in high latitudes. Upon the approach of Lent, they also play an important part, by granting plenary indulgence in the good things of this life to such natives as are carnally minded, or have a heretic antipathy to a leguminous diet.

Let us now touch upon a subject as delicately as its nature will permit, and yet which presents great interest in a medical point of view. All Oriental nations have long held the unenviable reputation of being tainted by the same gross licentiousness which caused two ancient cities to be engulphed in the Dead Sea. A few years ago, this vice was openly sanctioned, and every high official not only kept a *harem* of dancing boys, but was publicly surrounded by them on festive occasions. In those days, honorable native families and European residents took the same precaution to preserve the virtue of their sons as the chastity of their daughters. Now, although the Turk may still be justly accused of promoting Priapus, from the guardianship of vineyards to the niches of his Lares and Penates, yet civilization has thrown a veil over its publicity, and the surface traveler would infer a far purer state of morals than actually exists. Absurd as it may seem, there is some force in the argument advanced by the older practitioner, who claims, as a sign of Turkish regeneration, that the proportion of posterior caustic applications are diminishing to the more normal anterior. From frequent conversation with the better class of Turks, who invariably reprehended this custom, we can assign three reasons for its prevalence: The results are more economical; the prurient appetite of the voluptuary craves after novelty; lastly, the scarcity of females, arising from the system of polygamy, by which the wealthier classes monopolize the sex. In addition to this abuse, marriage among the poorer natives is attended with difficulties; for, since a Mohammedan can at pleasure divorce his wife, the latter, to check this license receives a dower from her husband, which she retains after the separation, and it is not every poor man who can afford such a preliminary expense.

The diseases arising from this unnatural relation are purely surgical in their character. We have often treated syphilis disreputably situated, rectitis, hemorrhoids, recto-fossal abscesses, fistulæ in ano, laceration of the mucous membrane of the rectum, prolapsus ani, and relaxation of the sphincter muscles, which were promptly referred by the patients themselves to the proper cause. The latter complaint is so common a one that there is hardly a male prostitute who does not experience more or less inconvenience from it. In two grave cases of rape, laceration of the perineum occurred, in a young Irishman, who was compelled to submit to the embraces of twenty Turkish soldiers, and a lad whose chastity was violated by half a dozen shepherds. The effect on the adult is absolutely negative, excepting in extreme cases, when satyriasis sometimes hideously crowns the career of the worn-out debauchee. It is a remarkable fact, and one based upon the results of long observation, that neither onanism nor pederasty, both of which prevail to a frightful extent in the East, emasculate the *morale* of the Oriental as much as they do the European.

In the former, the physician never witnesses the blushing awkwardness, the unmanly timidity, the restless vision, and the inability to look a stranger in the face, so characteristic of this habit in enlightened countries, which leads us to draw one of two inferences—that either the mental imbecility, resulting from self-pollution in moral communities, should be attributed far more to the humiliation of an educated conscience, than to the constant physical drain on the system ; or that where society openly upholds a vice, it is not so apt to be intemperately abused, as when local rules of propriety and the militant precepts of religion compel the votary to invest the indulgence with strict privacy. The secret tippler generally degenerates into the drunkard, while the social glass of a liberal society rarely leads to intemperance.

Since the introduction of New England rum, and the more potent liquors of the Baltic, against whose use ingenious commentators can find no interdiction in the Koran, because they are not the juice of the grape, the far-famed race of Turkish opium eaters is fast dying out. The quiet coffee shops where, twenty years ago, they were wont to assemble, and pass whole hours in ecstatic reverie, now rarely echo with the bubbling of their water-pipes. Alas for romance ! that æsthetic vice is rapidly yielding to the more seductive allurements of the glass. But should the traveler become familiar with their haunts, he may now and then see some haggard relic of the old school furtively steal into a quiet corner of the *café*, and, after hastily swallowing a bolus, sink back into a state of dreamy unconsciousness of everything save his chibouque. The celebrated hasheesh is well known, but what is sold in the shops under that name consists of a vile compound of morphine and liquorice. We once had occasion to obtain the analysis of a quantity, to account for symptoms so opposed to the effect of the Indian hemp, and which came nigh terminating the career of a rash American physician. All inveterate opium eaters contend that use so blunts the nervous sensitiveness that large doses of this narcotic simply induce sleep, without previously exalting the fancy. To obviate this fatal deficiency, and to economize the drug, the veteran pleasure-seeker mixes corrosive sublimate with his boluses ; and the enormous doses of this poison taken with impunity would exceed all belief, were they not well attested by numerous witnesses. The amount of arsenic taken constitutionally by the mountaineers of Tyrol and Styria are mere pleasantries, compared with the fabulous quantities of the bichloride which these Mithridatean stomachs can tolerate.

To illustrate this fact still further, we will give two anecdotes of a *mollah*, or priest, more celebrated for his devotions to the narcotic than for his genuflections toward Mecca. Entering one day the small drug shop of a Jew, he asked for corrosive sublimate, and, upon its being exposed on the counter, took up a handful, as if to examine the quality, and deliberately swallowed what appeared to be a mouthful. To be accessory to the death of a Turk, however accidental, is a terrible crime; hence, out rushed the Jew from his stall with a howl of terror, showing a clean pair of heels, if so bold a metaphor can be applied to a race which does not take kindly to water. The next morning, disguising himself, with fear and trembling he stealthily approached his shop, peeping around the nearest corner and fully expecting to see it in the hands of the police; but perceiving no signs of unusual excitement, took courage and sat down in his accustomed seat. A few days after, the wily Turk, suspecting the cause of the Jew's escapade, and wishing to turn it to account, entered the door and so worked upon his fears, by threats of prosecution for an attempt to poison one of the faithful, that the latter was only too glad to bribe him into silence.

Flushed with so unexpected a share of the hard-earned savings of an obscure apothecary, our worthy priest determined to try his luck with the far more wealthy druggists of Pera. Entering the store of a Greek, with whom we are well acquainted, he went through with the same manœuvres, swallowing, as the apothecary avers to this day, a piece of the bichloride weighing fully one drachm. After performing this feat, the priest hastily left, declaring the drug was adulterated; while our friend, in an agony of terror lest he should be murdered and plundered by a mob of fanatic priests, who would hasten to avenge the death of their brother, as hastily shut up shop, collected his valuables, and with his family fled into an obscure country town, where he passed a week of dreadful uncertainty. Before venturing to return, he had the good sense to seek the advice of a Turk, who presided over the medical jurisprudence of the realm. This functionary, a veteran opium eater himself, merely smiled, and practically proved to the much relieved apothecary how needless had been his anxiety. Of course the *mollah* returned to make capital out of his feat, but was received so unsuspiciously by the druggist, who coolly asked whether he had been able to procure elsewhere a superior article, that, concluding the game was up, he confessed the object of his second visit, and laughed immoderately over the practical joke he had at first unconsciously played upon the Jew.

The exemption of the dogs of Constantinople from hydrophobia has long been a mystery, and, although not strictly true, is sufficiently so to render their habits an interesting object of inquiry. Resembling a cross between the fox and wolf, acknowledging no master, these city-scavengers form themselves into communities of a dozen or more, and, with surprising intelligence, limit their foraging excursions to certain squares and streets, which are considered their beats and are recognized as such by their canine neighbors. Each tribe has its chieftain, or head-dog, who attains this rank, not by hereditary right, but by power of muscle; whose torn ears, fragmentary tail, and numerous scars attest the veteran warrior—hero of a thousand fights. Although contiguous communities are perpetually at variance and annoyingly quarrelsome, yet offensive and defensive alliances are made by some mysterious pantomime; and when an overwhelming force sweeps down on any district, the four-footed inhabitants of adjacent ones, forgetting past animosities, rush to the rescue with a howl of execration. When one family becomes too large for the offal of its district, some obnoxious member is pounced upon and summarily ejected. With downcast tail, he immediately proceeds to the neighboring district, where, lying on his back, he humbly appeals to the sympathy of the chief-dog, who, with great dignity, approaches the prostrate suppliant. Should his report prove favorable, the fugitive is immediately adopted into the new tribe. On the other hand, should the numerical addition be undesirable, the exile must pass through a perfect gantlet of bites, until he finds a less populous community.

Without shelter of any description whatever, the Turkish dog braves the inclemency of winter with impunity, keeping up the circulation of his blood, during cold nights, by perpetual skirmishes and pitched battles. In the Turkish quarters, fountains are numerous and they can always slake their thirst; but in the European portion of the city, the dog is a much abused animal, often half starved, and often without water for days during the excessive heat of summer. Yet instances of rabies are exceedingly rare, usually occurring among pet dogs, not among those at large. The natives recognize the disease in man, and vaunt as its cure a band of music constantly kept playing to keep the patient awake, in the open air, for the forty-eight hours of the thirty-ninth and fortieth day after the accident. During the twenty-one years of our residence in Constantinople, there occurred but three deaths by hydrophobia, all of which strangely happened in the summer of 1859. Of these three cases, two were clearly traced to the playful bites of pet animals, and the third was one of those exceptional cases, which seem to prove that sometimes the bite of a momentarily enraged dog will produce the characteristic disease.

A Bavarian gentleman, who was infatuated with a morbid desire to destroy every species of dog, in the most brutal and wanton manner, in endeavoring to beat a harmless street dog to death, received a bite from the infuriated animal. The dog had offered him no provocation whatever, and he attributed the fatal attack of hydrophobia, which resulted from the bite, as a just punishment for his former cruelties practiced on those animals.

All these victims were Europeans; because Turks rarely domesticate or abuse the dog; while the last solitary instance of a street dog communicating the disease is not a fair example. With regard to the immunity of the Turkish dog from madness, we incline to the belief that it is owing to the perfect freedom they enjoy in gratifying their sexual appetites; a municipal license which renders the streets of an Eastern city absolutely indecorous in the spring of the year. The orgasm of brutes, observing absolute laws of periodicity and dependent upon the return of certain seasons, must be far more violent than the corresponding permanent instinct in man. The libidinous fury of the stallion is proverbial; while the flesh of many animals not only becomes unfit for food, but sometimes highly poisonous during the period of copulation. Is it not, then, reasonable to infer that any restraint upon so powerful a passion might contaminate the whole system and create a new train of depraved action? This opinion may be founded on error, but it at least possesses some show of plausibility, especially when one considers that almost all instances of rabies occur in pets, whose masters, from various motives, rigorously confine them during heat. There is also another circumstance with regard to Turkish dogs, which possibly may operate in their favor,—the race is pure but plebeian, unmixed with aristocratic blood; while dog-fanciers, in order to multiply varieties and improve breeds, cross and recross the various species, until the original characteristics of each are lost, and their habits become unnatural.

The criminal custom of abortion is universal in all Oriental countries. It is countenanced in the palaces of the great, and practiced in the hovel of the peasant. Since the laws which define the primogeniture of the royal succession are vague and capricious, a mistaken state policy permits every Sultan to destroy his blood relations and the offspring of collateral branches of his family. For example: the present monarch has a brother, several sisters, and three daughters, who have contracted alliances with the aristocracy, but who are prohibited from raising any issue, male or female. Abortive remedies are either employed, or the children strangled at birth by a eunuch who waits in the lying-in chamber for that purpose. Among the upper classes, both polygamy and concubinage encourage abortion as a necessary economical measure. The poor, who always imitate the vices of their superiors, assign poverty as an excuse; until this inhuman practice, adopted by high and low, is not only sanctioned as a custom, but considered a domestic institution and a legitimate necessity.

This operation is usually performed by midwives and Jewish charlatans; although there are regular physicians who chime in with the humors of their patients. Various methods are employed; many smear the os uteri with the impure empyreumatic oil of tobacco which accumulates in their long cherry pipe-stems; others insert a tent of soft chestnut wood, which, swelling from absorbed moisture, is withdrawn to give place to another of larger dimensions. Most generally, however, a rude stiletto is used, with such want of anatomical knowledge that it rarely enters the uterine opening, and not unfrequently penetrates the inferior parietes and fundus of the womb. The fatality of this operation is very great; tetanus and metro-peritonitis hurrying the rash victim to her grave in a few days. The uncertainty of internal medicines renders them less popular; but we have seen two cases of fatal poisoning from the violence of the drugs employed.

At one time, the members of the Imperial Society of Medicine devoted all their energies to purifying this Augean stable of domestic crime, and caused the arrest of one illegal practitioner who had fatally used the uterine stiletto. At first the cabinet ministers promised an active co-operation, but, on sober second thought, pondered over the crying evils of their own large families, and the offender soon emerged from the precincts of the Bagnio with an increased reputation and practice. In the discussion which ensued at one of the sittings of this Society, it was argued that, so long as the Sultan sets the example not only of abortion but infanticide, and so long as polygamy and concubinage are sanctioned by religious antecedents, it would be impossible to enact laws against this unnatural crime. One member arose and stated the case of a nobleman who was blessed with forty-five children, and had recently been deprived of all position of emolument and sent into exile for some alleged misdemeanor. The question was asked, how could the embarrassed finances of such a man support any further increase in his family? The use of the stiletto becomes an absolute necessity. Abortion is no bastard growth, but the natural offshoot of Mohammedanism, and must be coeval with the vitality of Islamism. Other barbarous incrustations may be rubbed off by the constant attrition of intercourse with more civilized nations. But since the paradise of the Moslem embodies an attractive concubinage, which must have its prototype on earth, and since the false prophet quotes divine authority for his Ayesha, Fatima, and Miriam, his followers are bound to uphold polygamy with all its attendant evils.

The commerce in eunuchs is another evil growing out of Mohammed's pernicious matrimonial example. Wives are considered in the light of expensive mistresses, whose constancy must ever be regarded with suspicion; hence the jealousy of the husband requires these sable guardians of the *harem*. This cruel operation is performed during the infancy of Nubian negroes, by Coptic priests, who use no instrument but a razor, and arrest any hemorrhage by the application of hot ashes or the actual cautery. There is a mistaken impression among the profession that simply castration is resorted to. But Turkish jealousy, a keen observer of comparative physiology, marks the amorous proclivities of the ox, and requires complete extirpation of the genital organs. Not only are the testes, but even the scrotum and penis, indeed every vestige of the sex, completely swept away by one stroke of the knife. The urethral orifice is left on a level with the pubes; so that every eunuch is obliged to use a short catheter in order to prevent his clothes from being soiled. The capon, ox, and dray-horse become fat and sleek; but nature abhors the unnatural requirements of the Eastern voluptuary, and stamps the eunuch with hideous ugliness. Not a hair grows on his face; the skin of his forehead and cheeks hangs down in loose folds and wrinkles; his voice resembles the harsh notes of an old woman, or breaks into the discordant key of a lad, who is approaching the age of puberty. His temper becomes irascible, and his disposition most cruel. We have never known a eunuch to be celebrated as a singer; hence we infer that the castration, resorted to in Italy to preserve the fine female voices of boys for ecclesiastical music, could only be successful when the vocal talent had become developed. To add insult to injury, every royal eunuch, according to his rank, has one or more wives, of whom he is proverbially jealous. The Kizlar Agha, or chief eunuch of the palace, ranks as the third dignitary of the empire, and maintains a large *harem*, which is kept under the strict surveillance of subordinate eunuchs. It is a perpetual joke of the court-physicians to compare notes with one another about these women; who, when sick, are so sedulously guarded that the pulse can rarely be touched, and the tongue examined only through a slit in an impervious veil. The career of these females is brief. Vicious practices; sedentary habits; a luxurious table and robes of the thinnest gauze infallibly sow the seeds of consumption. We are not prepared to uphold the author of the "Anatomy of Melancholy" in his assertion that certain esculent roots and rhizomatous vegetables are denied entrance into these establishments; but this fact remains unexplained that, in spite of a liberal supply of coal gas, the weekly allowance of stearine candles for the imperial palace amounts to fifteen thousand pounds.

Small-pox inoculation, which was introduced by Lady Wortley Montague from Constantinople into England, in the earlier part of the last century, is still very much in vogue; but in the larger cities vaccination is becoming more fasionable. In spite of the prevalence of these two methods, the great majority of Orientals are unprotected, and the ravages of this dreadful disease are often terrible. It may justly be considered the only prevailing epidemic of the healthy City of Constantinople. In distant towns of the interior, whose means of communication with the capital are difficult, the want of vaccine matter is often felt; for mothers labor under absurd prejudices, and rarely allow the lymph or scab to be taken from the arms of their children. When out of matter, we have known native quacks make use of tartar emetic, which, upon a raw surface, will produced a pustule highly characteristic of the vaccine virus. The truth of Solomon's apothegm, that "there is nothing new under the sun," is well illustrated by the wild nomadic Kurdish tribes of Asia Minor, who have for centuries practiced vaccination on themselves, invariably taking the lymph from the vesicle of the cow.

Many bigoted Mussulmans, however, object to vaccination and inoculation on religious grounds, and prefer to run the fearful risk of a terrible epidemic, than to yield up one iota of their belief in fatalism. Friends commonly exhibit their sympathy for one another in sickness, by sending their own family physician to the invalid. In accordance with this usage, we were once conducted to the palace of a high Turkish functionary, who had two children, the elder of whom lay alarmingly ill with the confluent form of the disease. A false theology rendered the parents in the end childless; for neither would allow us to prescribe for the sick child, nor vaccinate the other, although tenderly attached to both, and tearfully fearful of the result. Their objections were grounded on a belief that small-pox was a judgment from heaven, and to combat the disease or limit its ravages was a blasphemous endeavor to thwart eternal decrees.

This stern fanaticism and inflexible confidence in fatalism, which make the Turk fearless of the plague, and lead him calmly to smoke his chibouque in a powder magazine, elicit our admiration, however much we may dissent from him. Yet it is often puerile and full of absurd inconsistencies; the doctrine of fate degenerating into a pack-horse which is saddled with human eccentricities. The hands of the physician are often tied by the petulant metaphysics of his patients. A predestinated bleeding may not interfere with the Divine decree, while a draught, particularly if offensive to the taste, shall arouse a holy indignation. In therapeutical theology we have found an emetic, assafœtida, and valerian to be highly heterodox. Clysters and gilded pills, on the contrary, are pronounced canonical by the most peremptory fatalist. When laboring under a predestinated illness, a sincere Mussulman is often harassed with doubts as to the consistency of calling in medical advice. The mooted point to determine is, which physician may be the one predestinated to cure him. To soothe the qualms of a troubled conscience, he consults, at different times, as many different physicians, and obtains from each a separate prescription. All these are next submitted to the nearest apothecary, who, either with prophetic sagacity pounces on the most expensive one, or else, with thrifty ingenuousness, confesses his ignorance of vaticination, and overcomes that deficiency by the ingenious mixture of all the prescribed compounds. After such a display of quibbling logic, one is willing to accept even Cowper's libel, who rhymes the puerile ratiocination of the Moslem with happy humor.

The heroic hygienic treatment of Oriental children would frighten Dr. Combe and cisatlantic mammas. A few days after birth, the spine is scarified in its whole extent, as an outlet for the "bad blood." Salt is then rubbed into the wounds of the screeching infant, and when the complexion becomes cyanotic, through excess of screaming, the palm of the midwife sonorously impinges on the youthful buttock, upon the same principle that a dilatory watch is thumped into increased activity. It is now swaddled up; and its arms and feet so tightly bandaged that all motion, save that of the head, is denied. A cradle is finally prepared into which the child is consigned, and where it remains, from one week's end to another, without being disturbed. An ingeniously contrived glass utensil renders all change of linen unnecessary in the maternal opinion. The mother nurses it by presenting the breast over the cradle; and as it is only washed when the mother is able to go to a public bath, which is often three miles distant, there is no earthly necessity for changing the position of the helpless sufferer. Infantile exercise appears to be one of the unpredestinated items of faith; nothing short of a conflagration will induce the parent to bear her child in her arms. Of course the mortality is frightful, almost rivaling the percentage of foundling hospitals. In this connection, let us observe that, when a new-born infant exhibits no signs of life, the native midwives do not cut the cord, but hasten the delivery of the placenta, which is rapidly transferred to a dish of coals. The only objection we can suggest to this practice is the odor; while it certainly possesses the advantage of not interfering with any other known method of resuscitation. On more than one occasion, we have deliberately pursued Marshall Hall's system of infantile gymnastics; the midwife meantime being scientifically engaged in frying the after-birth on an adjacent brazier.

The Turkish bath is certainly a great luxury, fully deserving the highest encomium. A process so familiar needs no description; but a word or two on its medical virtues may be instructive. Invaluable in chronic rheumatism, in obstinate syphilis, and cutaneous diseases, the friction of the goat-hair gloves and the artistic shampooing render it equally efficacious in dyspeptic complaints. In fatigue, from over mental or physical exertion, nothing can be more grateful; while the disheartening quantities of visible, tangible filth, which peals off from the person of the most scrupulously neat European, do violence to every preconceived notion of cleanliness. Like the far-famed elixir of life, the *Hamam* seems to infuse a glow of youth, a thrill of rejuvenescence into the veins of its most aged votary; although to the novice, fibres of asbestos and a salamander-like nature may seem a welcome property in withstanding its scathing vapors.

Every national custom is liable to some abuse, and the bath, piously restricted to the precincts of a mosque, is often inaccessible to Christian communities. We were once called away to a large Armenian town, about eighty miles from the capital, where no mosque and consequently no bath existed; the inhabitants being obliged to journey a distance of three hours to the nearest Mohammedan village, to enjoy the luxury of an annual ablution. On the other hand, many natives consider two baths per annum as the golden mean; and since the same voluminous suit of clothes and linen are worn unchanged during the interval, the exhalations arising from the Eastern person, however disguised by musk, sadly disorientalize refined olfactories.

We might spin out this article to twice its length, but the impatience of our readers, jealous of amusement when they look for instruction, admonishes us to end. Turkey is a bone of contention to the snarling powers of Europe. Its end is not far distant, and will be abrupt. Political physicians daintily feel the pulse of the "sick man;" hourly whisper his death; but, however agreed on the prognosis, are by no means as harmonious with regard to the treatment. Indeed, we hazard the uncharitable opinion that more than one incline to the heroic remedy adopted by Hazael toward his master. In view of this dark future, we shall never repent having jotted down the fireside prejudices and inner life of a nation doomed to lose its nationality and existence; just as the naturalist carefully labels here a rib, there a condyle of the now extinct Dodo.

Bi-Monthly Abstracts;

OR, BI-MONTHLY NOVELTIES IN MEDICAL, PATHOLOGICAL, SURGICAL, OBSTETRICAL, PHYSIOLOGICAL, AND CHEMICAL SCIENCE.

SURGERY.

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I.—*Contributions to the Subject of Compound Fracture.* By Mr. Thomas Bryant, F.R.C.S. (Medical Times and Gazette, Feb. 23, 1861.)

In this paper, read before the Royal Medical and Chirurgical Society of London, Mr. Bryant gives an analysis of 302 cases of compound fracture of the extremities, taken from the records of Guy's Hospital within the last twenty years. Excluding the examples of fracture of the smaller bones of the hands and feet, we find that the whole number includes 17, or 5·6 per cent., of the thigh; 193, or 63·9 per cent., of the leg; 35, or 11·5 per cent., of the arm; and 57, or 18·8 per cent., of the forearm. Taking up the classes of cases in the order above given, we find:—

1. That eleven of the seventeen cases of compound fracture of the thigh proved fatal, or 64·7 per cent. Nine of these examples underwent primary amputation, of which but three recovered. One underwent secondary amputation, death being the result. Seven were treated on conservative principles; four died, and three recovered. Ten were, therefore, subjected to amputation, and seven died; seven were left to the efforts of nature, and four of these died. This result shows the poor success obtained by conservative treatment, and is borne out by the experience of most military surgeons. Baudens succeeded in saving but two out of twenty-five cases, and these had useless and deformed limbs; and the author would, therefore, leave to nature's efforts at repair those cases only in which the subjects are young, the fractures uncomplicated, the bone not shattered, nor the soft parts extensively injured. Amputation should be at once performed in old or unhealthy patients, when the bone was comminuted and the soft parts materially involved; but in young and healthy subjects a favorable termination might be obtained by immediately removing the fragments, and maintaining absolute rest.

2. The 193 cases of compound fracture of the leg include fractures of the tibia, of the tibia and fibula combined, these being the most numerous, and of the fibula alone, but this injury was comparatively rare. Of the whole number seventy-four died, or 38·3 per cent. Conservative treatment was employed in 129, thirty-five proving fatal; thirty-two underwent primary amputation of the leg, nineteen of which died; eleven underwent primary amputation of the thigh, six of which died; fifteen underwent secondary amputation of the leg, ten proving fatal; and six underwent secondary amputation of the thigh, four of which died. Thus we find that 27·13 per cent. of those dying were treated by

conservative measures, and 60·9 per cent. of those treated by amputation. Mr. Bryant believes that the injury should be very extensive to warrant amputation, and that apparently hopeless cases often turn out well, when attempts are made to save the limb. By care and close attention, support and nourishment, giving free exit to pus, removing loose pieces of bone as early as possible, and the use of proper splints to secure perfect rest, successful results may be looked for.

3. Of the thirty-five cases of compound fracture of the arm, four proved fatal. Fourteen were treated on conservative principles, and all recovered; four were subjected to primary amputation at the shoulder-joint, and two died from internal complications; thirteen were treated by primary amputation, two of which died; four were treated by secondary amputation, and recovered.

4. Twenty-seven of the fifty-seven cases of compound fracture of the bones of the forearm were treated on conservative measures, and all recovered; twenty-two were treated by primary amputation of the forearm, of which two died; five were treated by secondary amputation, four of the forearm, one died; one of the arm, which proved fatal.

The causes of death in the ninety-six fatal examples are given in a table, from which it appears that pyæmia was twice as fatal in the cases subjected to amputation as in those treated on ordinary surgical conservative principles; and that exhaustion or gangrene were the more common causes of death. Delirium tremens and tetanus were the most prolific sources of a fatal result in the cases left to nature's efforts for repair.

II.—*Statistics of Compound Fracture at St. George's Hospital.* By MR. G. F. COOPER. (Medical Times and Gazette, Feb. 16, 1861.)

During a period of seven years, 124 cases of compound fracture have been admitted into St. George's Hospital, of which thirty-five died, or 28·2 per cent. The thigh was the seat of the accident in sixteen instances, of which eight died; the leg in eighty-two, of which twenty-three died; the arm in eleven, of which three died; the forearm in sixteen, of which one died. Primary amputation was resorted to in twenty-three cases, nine being fatal. Of these, seven were of the thigh, of which four died; eight of the leg, of which five died; four of the arm, and four of the forearm, of which all recovered. Secondary amputation was had recourse to in five instances, four being of the leg, with one death, and one of the forearm, which recovered.

In regarding the age of the patients we find a gradual increase of mortality with advance of life. Thus in infancy there were two cases, and both recovered; in childhood there were seventeen, of which two died; in adults there were seventy-two, of which nineteen died; from fifty years of age upwards there were thirty-three, of which fourteen died. These results show that age is a very important point to be considered in the treatment, and the influence it bears on the mortality of compound fractures.

In twenty-four of the whole number of cases the compound fracture communicated with a joint. Seven involved the knee, of which three recovered, the average time in the hospital being eighty days. In all but one primary amputation was performed. Of the ankle-joint there were nine cases, of which six recovered, the average time in the hospital being ninety-one days. Primary amputation was resorted to in one of the cases that recovered, and in two of those that died. There were eight cases of the elbow-joint, five of which recovered, the average time in the hospital being eighty-nine days. In one case of recovery, and in one of death, primary amputation was had recourse to.

Of the thirty-five fatal cases, the causes of death were principally other severe injuries, pyæmia, and exhaustion.

III.—*Clinical Experience in the Treatment of Stone, during the Year* 1860. By DR. CIVIALE. (Lancet, March 2, 1861.)

During the past year fifty-four patients affected with urinary calculus have been under the charge of Dr. Civiale, thirty-six occurring in his private practice, and eighteen in the Necker Hospital. Of the *private patients* twenty-six had stone for the first time, and in ten others fresh operations were required, on account of the stone having reappeared after previous operations. Twenty-six of these patients were subjected to lithotrity, and twenty-four were cured; in two the operation had to be relinquished from aggravation of the morbid condition of the bladder. One patient has since died, and the other still lives with the calculus remaining. In ten cases, the stone had acquired considerable volume and the urinary organs were in a more or less morbid condition. In two of these lithotrity and lithotomy being equally contra-indicated, death ensued from the progress of the malady. Four were lithotomized on account of the large size of the calculus, of which one rapidly recovered; in one the cure was incomplete, and two died. Two are still under treatment: one will be operated on by lithotrity and one by lithotomy; and in two the treatment has been postponed.

The hospital patients numbered eighteen, three being women, and all adults. Of the males four were not in a condition for crushing; two were cut, one being cured, but the other has a fistule; the third died of renal disease, refusing to submit to the knife, and the fourth is under treatment. One patient was also the subject of a strangulated hernia, requiring immediate operation, from which he died. The remaining ten were submitted to lithotrity and freed from the calculus. Eight of those recovered perfectly, but in two the cure was not complete, owing to organic lesions of the bladder. Of the females one was in so bad a condition that an operation was not performed; one was cured by division of the urethra and extraction of the stone; and the third had an extraordinary phosphatic calculus, formed upon a mass of teeth, of small bones, and of hair, arising from a cyst which had opened into the bladder. All these substances were gotten rid of by lithotrity.

M. Civiale terminates his communication with the following resumé:—

Of the fifty-four calculous patients, thirty-seven have been treated by lithotrity. In two cases the treatment was relinquished; one died; another retains his stone; two of them have not obtained a complete cure, because the stone has not formed the sole malady, but they are greatly relieved. The rest are cured.

Seven were submitted to lithotomy which saved four of them; but in two of these the cure is incomplete.

Ten have not been submitted to any operation; three have died from the progress of the malady, and one after the operation for hernia; one continues to live with his stone. Three are under treatment, and will be submitted, one to lithotrity, and two to lithotomy. In two cases the operations are postponed.

These facts prove anew the danger of long retaining the stone, and the utility of lithotrity when we apply it at an early period of the complaint.

IV.—*Case of Severe Injury of the Head, with Loss of Brain.* By W. H. MATCHETT, M.D. (Cleveland Medical Gazette, February, 1861.)

Dr. Matchett was called on the 9th of January, 1860, to see a man whom he found sitting by the stove, his face and clothing covered with blood, and frequently vomiting blood. He was not sensible of any particular injury, merely complaining of some pain in his shoulder and arm, on examining which, an axillary dislocation of the humerus was discovered. The head of the bone readily slipped into place by simply carrying the arm out from the body, and on inspecting the head and face more closely, Dr. Matchett "found the upper lip cut entirely through, from one angle of the mouth to the other: a small opening under the left eye, that was bleeding profusely, also a small opening in the centre of the frontal bone—a cut about one and a half inches long, extending from the outer extremity of the right superciliary ridge upward and outward into the temporal fossa. Through this opening, at every effort to vomit or to clear the nostrils, small fragments of brain would escape. I collected these until I had, as near as I could guess, about one-half ounce, and how much more had escaped before I saw him, I cannot say."

"Upon further examination I found the skull fractured from about the middle third of the left superciliary ridge, upward and to the centre of the frontal bone; thence toward the right to the temporal fossa; thence toward the outer extremity of the right superciliary ridge—the latter entirely broken down; and this circumscribed or detached piece of the frontal broken up into four smaller fragments. The nasal bones were driven in from their attachment; the malars broken and movable; the superior maxilla driven downward, and six of the front teeth of the same broken off even with the gums. Four front teeth of the lower jaw were pressed backward, splitting the alveolar process."

The patient was questioned as to how he received the injury, but contended that he was not hurt, his nose merely being stopped up from a severe cold. It was, however, ascertained that he left his house on the same day to fell a tree, and on visiting the spot, it was discovered that he had been injured by a large, knotted limb. By this was found a pool of blood, from which the patient could be tracked to the house, a distance of two hundred yards, having climbed three fences and opened and shut a gate on the route. The cut on the lip was brought together by stitches, and cold compresses were applied to the face and head. He sat in a chair nearly all night, as the recumbent posture caused nausea, and he vomited a quantity of blood. On the second day a cathartic was administered, and a consultation being held, it was decided very naturally that the patient could not live, and no attempt was made to elevate the depressed portions of the frontal bone, or to remove any of the fragments. On the twelfth day, the lip had united, and in attempting to remove the roots of the upper incisors, which caused severe pain, Dr. Matchett found the bones of the face movable, and had, therefore, to desist. The condition of the patient gradually improved, and he had no symptoms of compression. Every effort at blowing the nose would force air into the cellular tissue of the forehead, and for three weeks blood and mucus escaped from the nostrils.

On the first of March, "the nasal, malar, and superior maxillary bones, and the restored teeth of the lower jaw, are all firmly united to their attachments; but the front part of the superior maxilla is too long, allowing the front teeth or roots of the upper and lower teeth, to come together before the molars do, thus preventing the patient from masticating solid food. I found the fragments of the frontal bone united to one another and to the surroundings, but a little depressed. The patient is rational, and remembers shooting a pigeon on the day he was hurt, and also recollects going to the ash tree; but does not remember cutting it down, or making his way to the house, or anything connected with the accident."

The patient continued to do well, and was seen the following September at work on his farm. At the time of writing the report of the case, the author had not heard of any derangement of mind from the loss of brain.

V.—*Constant Success of Forcible Dilatation of the Sphincter, in the Treatment of Fissure of the Anus.* By M. ROBERT. (Glasgow Medical Journal, January, 1861.)

In cases of fissure of the anus, an affection usually attended with excruciating pain, and indefinitely protracted by spasmodic contraction of the sphincter muscle, M. Robert, contrary to the practice of most surgeons, rejects entirely the operation of division of the muscle, on the ground that it may be followed by serious consequences, as phlebitis, erysipelas, and even death. He considers local applications of slight efficacy, although, in recent cases, he has found the *onguent de la mère*—a combination of lead and basilicon plasters—very beneficial. Instead of these he resorts to forced dilatation, a method introduced into practice by the late Professor Récamier, and in a large number of cases has never failed in effecting a cure, nor has he ever witnessed untoward consequences follow the operation. The method consists in the successive introduction of both forefingers into the anus, which is then forcibly distended in several directions. This procedure elongates and overcomes the contraction of the muscular ring, and the fissure is probably torn and transformed into a simple wound. It is attended with considerable pain, and it, therefore, becomes necessary to place the patient under the influence of chloroform.

VI.—*Popliteal Aneurism Cured by Digital Compression* By GEORGE C. BLACKMAN, M.D. (Cincinnati Lancet and Observer, March, 1861.)

A laborer, twenty-seven years of age, applied to Professor Blackman on account of a large popliteal aneurism, of thirteen months' standing, and it was determined to treat the case by the combined methods of compression, manipulation, and flexion. On the 7th of June, 1860, some of the fibrin in the sac was broken up and dislodged, and the limb was enveloped in a roller from the toes to groin, compresses being placed over the tumor and along the course of the femoral artery. The leg was then strongly flexed upon the thigh, and secured in that position. After a week's trial the roller was abandoned and Petit's tourniquet substituted, and at the expiration of another week this was changed for Skey's instrument. Compression was continued for seven days longer, when the patient left for home, the tumor having diminished about one-third in size, but the pulsation being quite distinct. On the first of July, two students applied digital compression at the groin, and in *three hours* pulsation had entirely ceased. Eight months subsequently the man was seen, when he declared that the limb had perfectly recovered its functions. The pulsation had never returned, but the contracted and indurated tumor could still be felt.

VII.—*True Scirrhus of the Eyeball, occurring as a Primary Affection, successfully extirpated; with Special Observations, particularly in Reference to the Operation.* By RICHARD G. H. BUTCHER, ESQ., M.R.I.A. (Dublin Quarterly Journal of Medical Science, February, 1861.)

Many surgeons and pathologists of extended experience are disposed to doubt, and even deny, the existence of scirrhus of the eye, from the fact of never having witnessed an instance of it in this organ; encephaloid and melanosis, but especially the former, being sufficiently common. The case of Mr. Butcher is a well-marked example of this exceedingly rare affection, as is attested by the age of the patient, the peculiar pain, the density and hardness of the tumor, as well as its physical and microscopical appearances.

A woman, sixty-nine years of age, was admitted into Mercer's Hospital, on the 1st of November, 1859, with a tumor, of a circular shape, and about the size of a two-shilling piece, projecting between the lids of the left eye. Its surface was mammillated, and made up of a dense fleshy-colored structure, which, to the touch, was as hard as cartilage, and pressure did not give rise to pain or hemorrhage. A thin watery secretion flowed abundantly from the eye on each side of the growth, and it was the seat of lancinating pain. She was also the subject of severe hemicrania, which was aggravated during the night. Her previous history was that, two years before her admission, she was awakened by a racking pain in the eye, which remained unabated for days, and gradually the sight became dim. For about three months she could discern objects, but the vision was finally lost. Two months later "a red, fleshy pimple" appeared on the cornea, which slowly increased to the size above mentioned.

Mr. Butcher found that the tumor sprung from the cornea and its conjunctival membrane, without implicating the surrounding parts. On the eleventh of November the eye was extirpated, and the case treated in the usual manner. On the fifth of the following month, when she left the hospital, her condition had greatly changed; her appetite was restored, her nights were undisturbed, and she rapidly gained flesh and strength. A careful microscopic investigation of the growth proved it to be of a true scirrhous nature. All the structures, and the whole thickness of the cornea, were matrixed in the abnormal growth. The globe of the eye posterior to its encroachment was not altered in volume; the optic nerve was healthy, as were the sclerotic, and other coats of the organ; the posterior chamber was not encroached upon; the lens lay in its natural situation, while the iris was resting against, but not adherent to it; the anterior chamber was obliterated, in consequence of the cornea being forced backward by the tumor. Every adherent or approximating tissue, as the areolar and muscular, and the lachrymal gland, were subjected to the most searching examination, but were all exempt from contamination.

In commenting upon this remarkable case, the author suggests the following points relative to the operation: 1. On all accounts, it is better to place the patient recumbent, and leaned a little toward the affected side, so that chloroform may be administered to the best advantage, and the safety of the patient; and that the blood may readily escape, and not interfere with the after proceedings of the operation. 2. That the lachrymal gland should be taken away in all instances, when the operation is for cancer, or when an artificial eye is not applicable, so that no undue secretions may be produced, streaming forever over the cheek, the delicate lachrymal puncta being probably obstructed, spoiled in their functions, by the resulting inflammation set up by the injured parts; this objection to its being left being altogether apart from its liability to secondary infection. 3. It is of great importance to the sufferer that no disfiguring traces should remain, by the lids being apart, as so frequently occurs, with a rather prominent red fleshy protrusion from within; or if not projecting, at least appearing sufficiently repulsive within the space.

When an artificial eye cannot be applied, it is necessary to protect the delicate and sensitive parts within from extraneous matters and from sharp winds, and also to secure a placid expression of countenance, free from any trace of deformity. Mr. Butcher suggests for adoption the method of managing the lids pursued in the foregoing case, namely, after separating them by section at the outer canthus, and after the several steps of the operation to the removal of the organ, not bringing the divided surfaces in contact by adhesive strips or stitches, but permitting the upper lid to slightly overlap the lower, by a little more than the depth of its tarsal cartilage; if, as the wound heals, the drooping should threaten to be too great, then the lid may be slightly elevated, which can be readily effected by gently drawing it outward, and maintaining it at the required tension, either by strap or stitch. Sometimes the lid, if redundant, will be inclined to fall inward; this, too, may be prevented by the insertion of a stitch judiciously placed outside, so as to make a little tense the lid, and, at the same time, give it the least possible tendency to eversion of its tarsal edge: when the wound heals, this will not be found too great.

VIII.—*On the Reduction of Luxations of the Head of the Humerus simply by Manipulation.* By HENRY H. SMITH, M.D., Professor of Surgery in the University of Pennsylvania. (Medical and Surgical Reporter, vol. v., No. 19, 1861.)

The method of reducing dislocations of the head of the humerus by elevation and rotation is not a new suggestion, but to Professor Smith is undoubtedly due the credit of having amended and methodized this plan of treatment, and as such to render it worthy the attention of the profession. It does not require the use of an anæsthetic, provided the movements are made gently and slowly, so as not to induce fear or muscular resistance, and may be practiced when the subject is sitting up, in which event the scapula requires to be steadied.

The manipulation for an axillary luxation is as follows: Elevate the humerus as much as possible, or, at least, to a right angle with the body, and flex the forearm at a right angle with the arm. so that the palm of the hand will present to the patient's abdomen. Then seizing the wrist with one hand, and the surgical neck of the humerus with the other, while the arm is thus elevated and the forearm flexed, use the forearm as a lever, and rotate the head of the humerus upward, outward, and backward, until the palm of the patient's hand looks upward, and a strong resistance to further rotation, caused by the tendon of the subscapularis, is felt. Then bringing the elbow slowly to the side, and keeping the humerus parallel with the middle line of the axilla, that is, not carrying the arm either toward the anterior or posterior portion of the trunk, *rotate* the head of the humerus upward and forward by reversing the motion of the forearm until the palm of the hand shall again look downward, bringing the elbow to the side during this latter rotation, when the luxation will be reduced with great ease to both patient and surgeon.

To reduce an anterior luxation, carry the elbow as far backward as possible, and elevate it so as to throw the head of the bone into the axilla, then treat as in an original axillary dislocation. For a posterior luxation elevate the arm and carry it strongly forward, so as to make an axillary variety, and proceed as before.

The paper is illustrated by twelve cases, treated by this method, three being of the anterior variety, and the remainder axillary. One of the former was of three weeks' standing, and one of the latter of six weeks' duration. In about half the number, anæsthetic agents were not employed.

IX.—*On an Operation for Extracting a Stone from the Bladder by Urethrotomy and Dilatation of the Prostatic Urethra by means of a Dilating-Staff.* By MR. JOHN WOOD. (British Medical Journal, New Series, No. iii., 1861.)

The operation of Mr. Wood, practiced by him successfully in a boy, nine years of age, differs from the median method of Mr. Allarton, simply in the means employed to dilate the prostate and neck of the bladder, and in the size and form of the external incision. It is based upon the use of a staff opening at the curve into two blades, which admit between them, through an incision into the membraneous urethra, the forefinger of the operator, to effect forcible dilatation. The staff is furnished with a lever, pressure on which increases the dilating power, at the same time that the posterior blade is turned on its axis, and presses backward on the base of the bladder, thus holding it toward the perineum and preventing its yielding before the pressure of the finger. The preliminary incisions are of a lunated form, and are made with a very narrow-bladed knife, by commencing two lines to the right of the raphé, just behind the bulb, and carried in a curve to a point midway between the anus and left tuberosity of the ischium, terminating opposite to the former. By a divergence of the blades of the staff a groove is exposed, upon which the membraneous urethra is then to be opened from the bulb to the prostate gland, a little to the left of the median line, to avoid injuring the ejaculatory ducts. The prostate and neck of the bladder are then dilated by the finger, carried between the blades of the instrument.

The advantages of the dilating staff were: that the lateral tension renders a clean cut into the membraneous urethra, and a fair introduction of the finger to dilate, easier to accomplish; that the dilating finger is guided into the prostatic channel with the increased certainty of a conducting blade on each side, and is aided by the dilating action of the blades holding down the bladder, and preventing its yielding before the pressure of the finger, allowing it at the same time more tactile perception of the resisting tissues than can be obtained by the use of gorgets or dilators, which are also thus rendered unnecessary. The pressure of the separated blades guards against the passage of the finger between the bladder and pubes on the one hand, and the bladder and rectum on the other. Lastly, there is more positive certainty of avoiding section of the prostatic capsule, and exposure to the deleterious action of urine effused into the pelvic fascia above the levator ani, than can be obtained by the use of the knife or gorget in the prostate cutting in opposition to the contracting levator ani.

X.—*On Excision of the Head of the Femur.* By RICHARD BARWELL, F.R.C.S. (A Treatise on the Diseases of the Joints, p. 437. London: Churchill, 1861.)

The operation of removal of the head of the thigh-bone has attracted much attention and has been gaining in credit during the past fifteen years. In his admirable "Treatise on the Diseases of the Joints," Mr. Barwell gives, in the following terms, the best statistical accounts of its effects that we have yet seen:—

"I can thus gather 104 cases. Twelve times the operation was performed for injury, (eleven times gunshot injury, once for fracture of the thigh and descending ramus pubis.) Of these twelve but one recovered. Of the ninety-two cases in which joint disease was the cause of the operation, we find that fifty-six recovered, thirty-two are dead, four remain uncertain. Therefore, in eighty-eight cases, fifty-six recovered. Thus, the recoveries stand at the high ratio of 63·63 per cent. It must be, nevertheless, acknowledged that several of the patients, after having lived and even walked about for some months, or even more, ultimately succumbed to internal disease, generally to tuberculosis."

"Concerning the power or use of the limb afterward, it is necessary to speak with the greatest caution. Very many of the cases, after having been reported as cured, with perfect use of the limb, have been lost sight of just when the critical time for testing the use of the member has arrived. Many of these are, I believe, dead; others have not so much use in the limb as the first result of the operation might lead us to suspect. We may tabulate the only attainable numbers thus, but the quantity of 'useful limbs' is very much too high: of the fifty-six recoveries I get no reliable information in fourteen; in six the limb is useless, in thirty-six the limb is reported as useful."

PATHOLOGY AND PRACTICE OF MEDICINE.

BY RICHARD J. DUNGLISON, M.D.,

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I.—*Clinical Researches into Morbid Pigmentary Changes in the Complexion.* By THOMAS LAYCOCK, M.D., Professor of the Practice of Medicine, etc., in the University of Edinburgh. (British and Foreign Med.-Chir. Review, January, 1861, p. 185.)

Dr. Laycock, in consideration of the diagnostic importance of color-characters, and the fact that, in spite of their varied applications to practical uses, they are so imperfectly understood, devotes a paper to the clinical meaning and pathology of morbid pigment—deposits and pigmentary changes in the complexion. Clearer views as to the diagnosis, pathology, and treatment of certain related groups of constitutional diseases may be deduced as well from the absence of pigment-deposit as its presence.

The conclusions which Dr. Laycock proposes to illustrate are as follows:—

1. That besides blue and green, of rare occurrence, there are two common well-marked and distinct forms of morbid discoloration due to pigment-deposit, the *yellow* or sallow, and the black or *swarthy*.

2. That both yellow and swarthy discoloration of the skin will occur from the action of local irritants—as heat, light, cutaneous parasitic fungi, blisters, sinapisms, and the like, or in the progress of various diseases of the skin and its appendages.

3. That the absence of pigment (leucopathia) as well as its deposit, may be caused by inflammatory and other diseases of the skin, affecting its chromatogenous function.

4. That morbid states of the cerebro spinal centres will influence the deposit or non-deposit of pigment.

5. That morbid states of the genito-urinary organs in both sexes, acting probably through the nervous system, will determine the election of locality of pigment-deposit, according to the same law by which the development of sexual hair and pigment is regulated.

6. That structural disease of the abdominal viscera and peritoneum also exercise an influence through the nervous system upon the local deposit of pigment in the skin.

7. That in disease of the supra-renal capsules, the bronzing of the skin, whether swarthy or yellow, is partly nervous, and due to the direct or indirect influence of the capsules or the kidneys and nervous system; partly hæmic, and is so far due to the morbid influence of "dyscrasic" blood.

8. That pigmentary changes in the skin of both whites and blacks may be the *result* of morbid causes, and yet may remain after the operation of the causes has ceased, and assume a physiological character.

9. That although local morbid pigmentation of the skin may occur exclu-

sively from local causes, or the influence of the nervous system, in the majority of cases there is a morbid condition of the blood.

10. That the morbid conditions of the blood associated most commonly with pigmentary changes are characterized by those changes in the blood corpuscles (leukæmia, leucocytosis) which are observed in cachectic states of a constitutional character, (pregnancy, chlorosis, tertiary syphilis, chronic rheumatism, cancer, etc.,) or which are intimately connected with "dyscrasic," visceral, or glandular diseases (of the spleen, supra-renal capsules, lymphatic glands.)

11. That the tendency to discoloration increases (*cœteris paribus*) with age after a certain period of life.

12. That the morbid pigment-deposits proper, as distinguished from masses of altered blood corpuscles, are carbonaceous excretions, and are often vicarious with the suspension or imperfect elimination of other carbonaceous excretions, as the carbonic and lactic acids, and the pigment constituents of both the urine and bile; and are consequently associated with morbid states of assimilation, as well as of elimination, (through the skin, lungs, liver, kidneys.)

13. That among the morbid states of assimilation, the rheumatic and gouty are specially to be classed, as well as those coincident with anæmia.

Dr. Laycock enters as well into the literature of the subject as into the pathology; but as this interesting paper is but the first portion of his article on Cutaneous Discolorations, we forbear at present from doing more than referring to the general outlines and objects of the task which he has mapped out for himself.

II.—*Analysis of Fifty-Two Cases of Epilepsy.* Observed by DR. EDWARD H. SIEVEKING. Described by the author before the Royal Medical and Chirurgical Society, Feb. 12, 1861. (London Lancet, Feb. 23.)

This paper is the second contribution made by Dr. Sieveking to the statistical history of Epilepsy, and embraces the same number of cases as were subjected to analysis in the summary presented by him to the society in 1857. Only such points are detailed as are supported by satisfactory evidence of their accuracy.

Sex.—Twenty-three were females, or 44·2 per cent.; 29 were males, or 55·8 per cent. Taking the two series together, the ratio of females to males was as 45·2 to 54·8.

Age.—Based on the time at which the epilepsy first exhibited itself:—

Under 10 years	12 cases,	8 males,	4 females.
From 11 to 20 years . .	25 "	11 "	14 "
" 21 to 30 " . . .	7 "	5 "	2 "
" 31 to 40 " . . .	3 "	3 "	0 "
" 41 to 50 " . . .	2 "	1 "	1 "
Above 50	3 "	1 "	2 "
	52	29	23

Causes.—Hereditary taint was traceable in 14 cases, but in 8 only of these was there evidence of epilepsy having occurred in a near relative of the patient. Various exciting causes were traced in 37 cases.

Premonitory symptoms.—Comprising under the term "aura" all symptoms indicative of a near approach of a paroxysm, the author found it in 21 cases, or 40 per cent., or less frequently than in the first series, where 52 per cent. of the cases exhibited premonitory symptoms.

Headache was constant or frequent in 9 cases, or 17·3 per cent.; occurred after the seizures only in 12 cases, or 23·0 per cent.; and only immediately before or after the fits in 3 cases, or 5·7 per cent.

Biting the tongue, in the first series, was met with only in 32·7 per cent.; in the present series, 28 patients, or 53·8 per cent., exhibited this feature. Females are not less prone to inflict this injury upon themselves than males, for of the 24 cases in which the tongue had not been bitten, 16 were males and 8 females.

Urine.—The author has found various derangements in the urine associated with epilepsy, but none of them had been constant.

Treatment.—The author advocates no specific treatment, but recommends perseverance in a combination of moral, regiminal, and medical means. He considers that he can lay claim to eight cures, fifteen were decidedly benefited, while the remainder were either uninfluenced by treatment, or did not continue under observation for a sufficient period to justify any positive statement as to the result.

III.—*A Case of "Bloody Sweat."* By THOMAS K. CHAMBERS, M.D., Physician to St. Mary's Hospital. (London Lancet, March 2, 1861.)

Dr. Chambers devotes a whole Clinical Lecture at St. Mary's Hospital to the history of a case of vicarious hemorrhage, a patient "whose bleeding brow and blood-streaked cheeks," according to the lecturer, "painfully recalled the attempts of mediæval art to realize the agonies of Gethsemane, or the thorn-crown worn, in Pilate's judgment-hall for our sake."

Up to the age of twenty-three, the catamenia had appeared but once or twice. At this time commenced in the skin of the face peculiar symptoms, which, continuing to the present time, may be described as follows: she feels first a peculiar soreness and tenderness of an isolated spot, which enables her to predict that in the course of a few hours an eruption is going to commence. The first appearance of this is an erythematous blush, sometimes slightly raised above the surrounding surface, but not so much as in erysipelas. After a short time, a scattered crop of fine vesicles like sudamina appear, mixed with a fine serous dew not covered by any pellicle. This never lasts long enough to form colorless drops, for quickly it becomes blood-stained, and the little points of blood are seen oozing out, sometimes so slowly as to dry and form a scab, sometimes collecting into great thick gouts, and trickling in a ghastly way down her face.

The eruption runs through its stages most quickly when she is asleep in bed. The bleeding is increased and prolonged, if the part be rubbed or washed; but if left alone to dry in a scab, it stops in a week or ten days, to be succeeded before it is quite recovered by a similar eruption in another place. Sometimes the cutaneous phenomena were replaced by bleeding from the nose, sometimes by vomiting of blood, but never by hemorrhage from either lungs or bowels.

She finally recovered, after leeches had been applied to the spot at which the bleeding was expected; but was admitted into St. Mary's Hospital as a mild case of erysipelas of the face. But when it began to bleed, its nomenclature, pathology, and treatment, puzzled Dr. Chambers not a little.

But here, in addition to the facial hemorrhage, the legs, thighs, forearms, and chest exhibited at different times similar appearances. With all these derivations, she appears healthy in other respects, and does not seem to be weaker in muscular power than on admission. When the uterine function was temporarily re-established, there was no immediate lessening of the cutaneous hemorrhage; but the woman is now so much improved as to have become an out-patient.

In commenting on this interesting case, Dr. Chambers refers to the rarity of this form of vicarious hemorrhage, and to the difficulty of finding any records of a similar kind. The cases which he has been able to collect may be summed up in a few words; they begin with Haller's account of eighteen cases, and but few have been recorded since. The literature of the subject is scanty, simply because the number of patients is scanty.*

From this case and the others recorded previously, Dr. Chambers arrives at the following conclusions:—

1. Cutaneous menstruation occurs in robust and healthy-looking, rather than in anæmic, persons. It appears in fact to be a plethora.

2. It may occur without any detectible disease of the parts of generation.

3. It may also be caused by disease in those parts.

4. The catamenia are not necessarily entirely diverted from their usual channel.

5. Periodical cutaneous hemorrhage is not necessarily connected with the catamenia at all, for Van Swieten quotes the case of a man.

6. It is not always strictly periodical.

7. Suppressio mensium may go on for many years without any tendency to vicarious menstruation.

8. Cutaneous menstruation usually appears in the shape of a slightly swelled erythema, painful and tender, on which vesicles form; the vesicles quickly burst, and there is poured forth a sero-sanguinolent exudation, which then becomes bloody, and continues to exude like a bloody sweat for various times, from four days to a fortnight. No scar is left, but the skin is slightly discolored for some time afterwards in the parts affected.

9. Perhaps we ought not to call it a disease of the womb any more than a disease of the skin.

10. Blood-letting is the most efficacious treatment; and it is most efficacious in the form in which it is known to produce its most powerful physiological effect, namely, in small repeated doses, and as close as possible to the seat of action, that is, on the spots affected. The measure of the good effect of the blood-letting is the relief experienced by the patient without loss of strength.

11. No other remedies are as yet known to be of any advantage.

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* A case of vicarious hemorrhage, presenting some of the phenomena described in Dr. Chambers's case, is referred to by Professor Dickson, as occurring in his practice.—(*Elements of Medicine*, 2d ed., p. 375. Philad. 1859)

IV.—*Hypochondriac Delirium a Forerunner of Paralysis.* (Journal de Médecine et Chirurgie.)

It not unfrequently happening that the symptoms by which general paralysis is ushered in escape notice, it is all-important to recognize their existence if possible. Among these M. Baillarger indicates, as deserving of attention, hypochondriac delirium. He asserts that it is a serious presumption of the future occurrence of general paralysis, and adds one element to the prognosis of the disease.

Bayle's interesting and valuable researches have made it abundantly plain, that delusions marked by much elation, or the *manie des grandeurs*, are in many instances the premonitory signs of paralytic dementia. If it is really the case that the delusion of fancied supereminence is of such great prognostic value in monomania, why should not the same be true also of the hypochondriac delirium of melancholics?

M. Billod, chief physician of the Asylum of Sainte-Gemmes-sur-Loire, afterwards endeavored to show that M. Baillarger's remarks on hypochondriac delirium, as a forerunner or a *pathognomonie* of general paralysis, are equally applicable to all forms of melancholic delusion whatever their nature; for instance, to fancied persecution, and that the important fact adduced by the professor of La Salpetrière refers more to the variety of melancholia attended with stupor, than to the peculiar nature of the delusions by which it is accompanied. M. Billod agrees with M. Baillarger and most authors, that general paralysis may be characterized as well by melancholy and depression, as by elation with large delusions; and he has even found both forms of mental aberration combining in the same subject to induce a mixed mental condition, in which notions of ideal wealth and grandeur were associated with the chimerical dread of persecution.

M. Brierre de Boismont has sought for the first indications of general paralysis in the perversion of the moral and affective faculties. Of all moral perversions, that which has especially struck M. Brierre de Boismont is kleptomania; in the second place, he considers as highly suggestive the perpetration of shamefully licentious acts, in contrast with previously correct habits of life.

V.—*Case of Recurrent Anæsthesia of almost the entire Surface of the Body, accompanied by Partial Loss of Motor Power in all the Limbs, traceable to the Effects upon the Spinal Nerves of Effused Products within the Spinal Canal.* By JOHN W. OGLE, M.D., Assistant Physician to St. George's Hospital. (Reprinted from vol. xliii. of the Medico-Chirurgical Transactions, published by the Royal Medical and Chirurgical Society of London, 1860.)

The great infrequency of the post-mortem appearances met with in this case, the character, cause, and mode of access, etc., of the various symptoms, and the close and intelligible dependence of the symptoms upon the lesion, as determined after death, give a special interest to this case described by Dr. Ogle.

Symptoms.—Before his admission into the hospital, he had suffered every winter for about six years from numbess and the peculiar sensation usually termed "pins and needles" in his lower limbs, and when brought to the notice of the hospital presented the following interference with motor power and general sensibility of the integuments. The leg, as far up as the middle of the thigh, both arms, at all parts below the elbows, both cheeks, and both sides of the nose, were almost insensible to pinching or pricking. The muscular power was much weakened, both in the arms and legs.

After appropriate treatment, which included blisters, diuretics, mercurials, and nux vomica, he enjoyed for a time entire immunity; then was subject to slight relapses every year, but only in the winter time; then had a relapse so severe as to necessitate discontinuance of his work; and, after partial recovery, slight attacks, the upper limbs only (and chiefly the right one) being affected; and finally, after several more slight invasions, was attacked by his last illness, which differed materially from all previous attacks. When last admitted, he was rambling and soporose, and his mental condition was such that Dr. Ogle found it difficult to discover to what extent the powers of motion or the sensibility of the skin were interfered with. He died on the third day after admission, having been in a state of stupor during nearly the whole period.

Post-mortem appearances.—The most interesting changes observed were in the spinal column, chiefly at the lower cervical and the upper dorsal regions, the anterior and the posterior roots of the nerves being invested by very firm fibrinous material, partly of a white and partly of a pinkish color, the deposits being sufficient in some places to form a layer, obscuring and matting together the various nervous strands composing the entire nerve-root. In one place, it formed a pink-stained mass around one of the anterior roots on the right side, of the size of an ordinary pea, and having much the appearance of a neuroma.

On microscopical examination, Dr. Ogle found that the great part of the material investing the nerve-roots possessed all the histological appearances of ordinary fibrinous material; but in some portions there were discovered vast numbers of peculiar round and oval and oat-shaped bodies. Where the masses about the nerves were pinkish, blood-globules were found mixed with the material.

Remarks.—The author's view of the nature of the adventitious material referred to above is, that it was manifestly the remains of some exudative process which had during life affected the spinal membranes. This may have been of a purely local nature, and of a kind usually designated inflammation of the spinal membranes, (the masses of deposit about the nerves being, in fact, only part of some exudation, the rest, chiefly fluid, having been absorbed,) or a mere expression or manifestation, that is, of some general cachectic state such as would induce fibrinous effusions simultaneously into various organs and upon various free surfaces. The roots might thus become compressed as if a ligature were passed around them.

Dr. Ogle finds a difficulty in explaining the lengthened intervals occurring in such a chronic series of attacks. From the course taken by the symptoms, the nerves of the lower part of the cord were doubtless first affected, then those of the upper part, and finally the fifth cranial nerves. With all this morbid condition of the spinal nerves, the freedom from pain and from pathological muscular contraction, until late in the disease, can only be accounted for by the extreme slowness of the diseased action. Mental disturbance just before the termination of life no doubt corresponded with the invasion of the sub-arachnoid tissues at the base of the brain, and with the softening of the walls of the ventricles, with effusion into their cavities.

VI.—*On the Restoration of Suspended Animation in Persons Apparently Drowned.* By DR. CHRISTIAN. (London Lancet, Feb. 2, 1861.)

A communication to the Royal Medical and Chirurgical Society by Dr. Christian, Medical Officer of the Royal Humane Society, elicited considerable discussion as to the proper means to adopt in the cases referred to. It appears that two societies, the Royal Humane Society and the National Life-boat Institution, issue instructions which are not uniform either in detail or in principle. They differ on two important points—

1. As to the mode of performing artificial respiration.
2. As to the propriety of using the warm bath.

During the twelve years of Dr. Christian's service, 443 submersions had occurred; 181 of which were rescued and recovered without treatment; 165 were treated successfully at the Receiving-house; 97 were brought dead or were unsuccessfully treated. It seems that the Life-boat Institution uses Dr. Marshall Hall's "Ready Method," while the other society employs the method of Dr. Silvester.

The latter, it seems, had given Dr. Hall's method a fair trial in fifteen cases, in order to test its efficiency, but all parties interested were firmly convinced that Dr. Silvester's method was in every way superior, more manageable, less likely to injure the patient, will fill the chest with air and expel air from it more fully, and will not force the contents of the stomach upward and in the way of respiration. The directions for treating the asphyxiated at the Receiving-house, Hyde Park, may be appropriately introduced here:—

"Wipe the mouth and nostrils directly the body is taken from the water.

"Use Dr. Silvester's method; at the same time let the body be taken as quietly as possible to the Receiving-house, and place it in the bath up to the neck.

"Raise the body in twenty seconds from the water, and dash cold water against the chest.

"Pass ammonia under the nose.

"Use again Dr. Silvester's method, and the inflating apparatus, if it fail.

"Remove the body from the bath, and rub the surface with dry hot towels, perseveringly continuing the other treatment."

The author thinks inflation of the lungs, by Dr. Silvester's method or by the society's apparatus, the first remedy, and the shock of the warm bath the second; that after eight minutes' complete submersion, recovery is hopeless, and that when ten minutes elapse after being taken from the water without any effort at respiration, it is equally so.

In the discussion that ensued on the presentation of this paper, Dr. Sharpey and others participated. The former thought that many of the cases of resuscitation in which the "Ready Method" had been successful were still-born infants, some of whom would have recovered, if left alone. He thought that in many of the cases of recovery after submersion in adults, respiration commences spontaneously as soon as the patient reaches the air; not, therefore, in consequence of the means used for resuscitation, but in spite of them. He was in favor of the old method of insufflation, the emphysema occasionally produced by it being due to the quick forcing of air in too great a quantity into the lungs, and in unsuccessful cases, in which insufflation had been practiced, no emphysema had been found at the autopsy. Dr. Sharpey thought other objections to the modes suggested were untenable.

Dr. Sibson, assisted by Mr. Hunter and Mr. Holmes, had made unsuccessful experiments with Dr. Hall's method. Mr. Spencer Wells suggested that the operation for insufflation might best be performed by passing a tube through one nostril into the glottis; accoucheurs were in the habit of inflating the lungs by passing an elastic tube down the glottis. Dr. Christian had never found emphysema to result from the use of the bellows when properly regulated, and was anxious for the adoption of definite rules and instructions upon the best modes of restoration of suspended animation. It is to be hoped that the arguments and evidence on both sides will be carefully weighed, and the merits of each mode rigidly tested by a competent commission.

VII.—*The Nature and Origin of Epileptiform Convulsions caused by Profuse Bleeding, and also of those of True Epilepsy.* By ADOLF KUSSMAUL and ADOLF TENNER, M.D. Translated by EDWARD BRONNER, M.D. (A Monograph published by the New Sydenham Society of London.)

The chief results obtained from these careful researches may be concisely grouped under the following heads:—

1. The convulsions appearing in profuse hemorrhage of warm-blooded animals (including man) resemble those observed in epilepsy.

2. When the brain is suddenly deprived of its red blood, convulsions ensue of the same description as those occurring subsequent to ligature of the great arteries of the neck.

3. Epileptic convulsions are likewise brought on when the arterial blood rapidly assumes a venous color, as, for example, when a ligature is applied to the trachea.

4. It is highly probable that in these cases the attack of spasms depends upon the suddenly-interrupted nutrition of the brain. It is not caused by the altered pressure which the brain undergoes.

5. Epileptic convulsions in hemorrhage do not proceed from the spinal cord, nor from the cerebrum; their central seat is to be sought for in the excitable districts of the brain lying behind the thalami optici.

6. Anæmia of those parts of the brain situated before the crura cerebri produces unconsciousness, insensibility, and paralysis in human beings; if spasms occur with these symptoms, some excitable parts behind the thalami optici must have likewise undergone some change.

7. Anæmia of the spinal cord produces paralysis of the limbs, of the muscles of the trunk, and of respiration. When the anæmia suddenly attains its greatest intensity, then only, and even then but rarely, do slight trembling movements of the limbs precede paralysis. The sphincter ani acts analogously to the con-

strictor muscles of the face in anæmia of the brain, that is, it contracts spasmodically before it relaxes.

8. Convulsions from hemorrhage are neither physical nor reflective; they do not ensue

a. In cold-blood animals, at least not in the frog.

b. When the hemorrhage is slow, so that the vital power is only gradually consumed.

c. When the animals are very much debilitated.

d. When the nutrition of the spinal cord has suffered.

e. When large pieces of the excitable districts of the brain have been removed.

f. In animals subjected to etherization.

g. Doubtless, also, when excitable districts of the brain have undergone certain pathological alterations.

9. As suffocation brings on convulsions, and etherization averts them, it is evident that etherization and asphyxia are two different conditions.

10. The brain of warm-blooded animals can only be deprived of red blood for a short time; otherwise it loses its capability of resuming its functions when again supplied with the nutritive fluid, and the appearance of death becomes a reality. The brain of some rabbits preserved this capability for two minutes.

11. It is sometimes observed, after the arteries of the neck have been tied, that the muscles of the trunk perish and take on the rigor mortis before the action of the left heart is extinct. Hence the left heart is not always the *primum moriens* among the muscular organs.

12. Contraction and subsequent extreme dilatation of the pupils in the agonies of death is no certain sign of real death, and of the incapability of being revived, as maintained by Bouchut.

13. To cure epileptic attacks caused by anæmia, there is no better method than that of renewing the supply of red blood. The debilitating method of treating epilepsy, especially by *abstracting* blood, should almost always be rejected.

14. The quantity of blood in the cranial cavity can, by way of experiment on the living subject, be considerably increased or diminished.—Hyperæmia in the cranial cavity is caused by releasing the stoppage of circulation in the cervical arteries, (arterial congestion,) by tying the cervical veins, (venous congestion,) especially by simultaneously dividing the cervical branches of the sympathetic nerve, (venous arterial congestion,) and lastly by tying the trachea during inspiration, (venous congestion by asphyxia.)—Anæmia in the cranial cavity is produced by hemorrhage and by tying the cervical arteries, (passive anæmia,) as well as by electric excitation of the vaso-motor nerves of the head, (active anæmia.)

15. The quantity of blood contained in the cranial cavity after the application of a ligature to the arteries is greater than after hemorrhage; the anæmia, as regards small arteries, the capillaries, and the smallest veins being always present to a greater extent.

16. From the quantity of blood contained in the skull after death, it is seldom possible to draw certain conclusions with respect to the quantity contained during life. The death-struggle brings on numerous conditions altering the cir-

culation of the blood in the skull, and even in the corpse the quantity of blood may still undergo alterations.

17. The phenomena of the incomplete epileptic attack can be explained by alterations occurring in the cerebrum only; while the phenomena of the complete attack presuppose an alteration of the whole brain.—Convulsions in epilepsy are justly styled cerebral ones, and the spinal cord probably plays only the part of a conductor, transferring the impetuses it receives from the brain to the muscles.

18. Circumscribed anatomical alterations of the brain, or alterations of protracted duration, cannot be regarded as the proximate cause of epileptic attacks, but may cause epileptic *affections* (dispose to epilepsy.)

19. Pathological anatomy cannot give any explanation as to the nature of epilepsy.—Suddenly-withheld nutrition is only one of the causes by which the brain is brought into that peculiar internal condition which is manifested in the form of an epileptic attack.—Arterial congestion of the brain does not seem to be capable of producing any other symptoms than those of paralysis, (dizziness and apoplexy.)—Venous congestion of the brain, as well as arterio-venous congestion, brings about conditions which belong more to those of apoplexy than to those of epilepsy, and are characterized by paralysis of the glottis, together with a slower respiration and slight spasmodic symptoms.

20. Marshall Hall's sphagiamus and trachelismus are not to be regarded as a source of epileptic attacks, but the latter will produce them. All theories are false which assert the epileptic attack to be derived from a sudden determination of blood, whether active, passive, or mixed.—It is probable that certain forms of epilepsy result from a spasm of the muscular coats of the cerebral arteries.

21. The epileptic affection which disposes to the attacks occupies either the whole of the brain or some districts only, and by it the brain is brought into that altered state on which the epileptic attack is based.—The medulla oblongata, as being the part whence the nerves causing the constriction of the glottis and the vaso-motor nerves take their rise, seems frequently to be the spot from which eclamptic and epileptic attacks proceed.

OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

BY WM. B. ATKINSON, M.D.,
LECTURER ON OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

I.—*Rigidity of the Os Uteri.* By Charles Arnott, M.D., Edinburgh.

A rigid os is, perhaps, one of the most frequent causes of lingering labor. The pains are regular, increase in severity, and reach an intensity that assures all present of a speedy delivery. Examination reveals a dry, rigid vagina; the os high up, posteriorly, with an opening barely sufficient to admit the finger; the fœtal head low down, anteriorly, covered by the uterine walls, and at each pain appearing as if about to force its way through these tissues. Thus, labor may continue for hours. In the majority of cases, the os is not truly in a rigid state, but the absence of the dilating power of the wedge-like "bag of waters," the membranes having ruptured early, produces delay, and the head is driven not directly into the os, but against the anterior wall of the uterus. Dr. Arnott regards the usual treatment of these cases as highly improper, and prefers reduction and dilatation by manipulation, or in more aggravated cases incision of the opposing texture. The parts should be freely lubricated, the finger introduced during each pain, and the os drawn gently downward and forward, and at the same time dilated. A speedy improvement is the result, though in a small minority the os may require a slight notching with the bistoury. Dr. Arnott considers this but an imitation of nature, as the practitioner frequently observes spontaneous laceration, even to a great extent, as occurring in such cases. This plan he has followed for many years, and always with benefit. Never having encountered a case where any evil resulted, he believes it almost entirely free from danger.—(*Lancet*, January, 1861.)

II.—*Placenta Prœvia; Treatment by the Caoutchouc Water Pessary.* By E. J. FOUNTAIN, M.D., Davenport, Iowa.

Mrs. P., aged twenty, at seven and a half months of her pregnancy, began to have hemorrhage, but without labor-pains or dilatation of the os. This ceased partly under the use of rest, cold water, enemata, opium, and acetate of lead. At the end of two weeks, it recurred with greater violence and some pain. Dilatation was sufficient to allow the finger to enter, and the placenta was ascertained to be in front. To check the alarming discharge, a caoutchouc bag was introduced, and filled full of cold water, which at once arrested the flow. In half an hour it again commenced moderately; the water, now quite warm, was allowed to escape, and the bag refilled. By the continuance of this process through the day and night, the patient was kept safe. When the contents were changed, an examination could be made without removing the instrument. After twenty-four hours, as the os was becoming well dilated, and the pains more regular, turning was thought of, but finally rejected, and the former plan continued. Finally the head pressed down on the placenta, thus perfectly controlling the hemorrhage, and the child was soon born in good condition, about thirty hours after the commencement of the treatment. The placenta was found loose in the vagina.—(*Am. Med. Times*, March 9, 1861.)

III.—*Quinia in Tedious Labors.* By JOHN LEWIS, M.D., Knightstown, Ind.

In the proceedings of the Union Medical Society, Dr. Lewis reports a case of labor in which, after about ten hours of slight ineffectual pains, he had the patient's feet bathed in warm water, dry cups applied to the sacrum, and gave at once ten grains of quiniæ sulphas; the pains immediately increased in frequency and duration, and the labor steadily progressed to a speedy termination. He says this has been his custom for the last ten years, and he expects the same result, as surely as nausea from ipecac. or purging from jalap.—(*Am. Med. Times*, February 16, 1861.)

IV.—*Rupture of Uterus; Recovery.* By G. T. ELLIOT, JR., M.D., New York.

On the 25th of November, 1860, I was called by Dr. Slevin to see Mrs. M. in her second labor. The first had been severe, but terminated naturally. She had suffered for eighteen hours, when she complained of a sharp, agonizing pain in the left iliac region, and the contractions ceased. Before this the brow, tips of the fingers and the funis had been recognized as presenting, but they had now receded. She was weak, and vomiting a clear green fluid; pulse one hundred and thirty, and feeble. Within the cervix, to the left, was a longitudinal fissure, which did not involve the entire thickness of the cervix. It was decided to turn; the patient took some stimulus, and the operation was completed, the delivery of the head requiring its being broken up, as locking occurred. After the delivery, the fingers could be passed through the rent so as to feel a loop of intestine and the peritoneal coat of the abdominal wall. Slight hemorrhage took place, and contraction ensued, which was aided by ergot and ice in the vagina. The ergot was vomited almost immediately. The patient was placed in bed, and care taken to procure reaction. The vomiting was persistent for two days, when she began to improve, and by the latter part of December was out walking. The treatment was solely sedative and stimulant.—(*Am. Med. Times,* February 23, 1861.)

V.—*Successful Case of Cœsarean Section.* By Jas. Edmunds, M.R.C.S., etc., London.

Mrs. P., aged thirty-eight, in labor for five days, became exhausted. On examination, there was found projecting into the vagina a hard mass, two inches in diameter, superficially ulcerated and tuberculated, so that the os could with difficulty be made out. When the finger was passed in, there was felt a dense, unyielding tissue, referable only to cancerous enlargement of the os and cervix. Has had for two years severe pain in coitu, and a fetid sanguinolent discharge, with constant aching and lancinating pains in the loins, hips, and thighs. Her pains are frequent, with a muco-sanguineous discharge. She was kept on good diet, opium, and patience enjoined. After the lapse of the above period, she being a calm, courageous, intelligent woman, was told of the alternatives; exhaustion and death from obstructed labor; laceration of the os uteri, and death from hemorrhage; or, on the other hand, an operation, either slitting up the os, and delivery by the forceps, or craniotomy, or the Cæsarean operation. On the sixth day of the labor, the latter was performed, after the usual preparation. The urine was drawn off, the liquor amnii discharged, and she was then seated on the edge of the bed, her legs hanging over, the head and shoulders supported by pillows, and a warm flannel petticoat loosely tied round her waist. Chloroform was administered, and with a large scalpel an incision was made upon the inner edge of the rectus muscle, from the navel down to within a short distance of the pubis. The uterus was opened from above downward, the placenta and child were quickly extracted, and the uterine fibres contracted and firmly closed the opening. The wound in the abdomen was then carefully closed by means of the interrupted suture and strips of adhesive plaster, after which the usual dressings were applied. She was placed on beef-tea, anodynes, etc. After the usual favorable and unfavorable changes, by the fourteenth day the wound was soundly consolidated, and all going on as in ordinary labor.—(*Med. Times and Gazette,* January 5, 1861.)

VI.—*The Functions of the Placenta.* By V. NIVET, D.M.P., of Clermont Ferrand.

M. Nivet, in a letter to Prof. Courty, takes issue with him on the ground that he has declared the placenta to be exclusively an organ of absorption and nutrition. M. Nivet maintains that it is also an organ of sanguification. He explains this as meaning that function which has for its purpose the adding of oxygen to the blood which traverses the capillaries of certain organs; the result is that the globules become redder and the blood warmer. This function is direct or indirect. In the direct, the black blood, which has furnished materials to the organs of secretion and nutrition, comes in contact with the atmosphere, or with a liquid containing oxygen, which gas unites with it.

In the indirect, the organ (the liver for example) carries from the blood materials charged with carbon, (the bile,) causes the oxygen to predominate in the particles dissolved in the blood of the hepatic veins. The villosities or divisions of the cotyledons of the placenta are formed of tubes terminating in a cul-de-sac in the uterine sinuses. These tubes contain each a ramification of one of the umbilical arteries, which forms a loop by anastomosing with the umbilical vein. This loop represents the capillary net-work of the lungs, or more exactly that of the veins and arteries of the gills of animals which live in the water. These extremities are plunged into the uterine sinuses, from which they are separated by a membrane of great delicacy. The pores of this tunic are large enough to permit the plasma, but not the globules of the blood of the mother, to pass into the placental vessels.

To verify these views, he made the following experiment: After the birth of a child at the Hôtel-Dieu, he tied and cut the cord, and then separated a piece of it, first ligating it at each end. The umbilical arteries presented a deep blue color, the vein a lilac tint. Two punctures were made at the extremities of this loop, one into an artery, the other the vein; the two jets were received on a white surface; that from the artery was of the color of the blood of a vein of an adult; that from the vein was sensibly redder, its color was intermediate to that of arterial and venous adult blood, but approaching venous. The blood by contact with the air became redder. A drop of warm blood from the vein was quickly spread on a warm glass, and, under the microscope, was in every way similar to the blood of an adult. After the separation of the placenta, the umbilical vein presented a lilac reddish tint, while the arteries were much darker, approaching blue.

All subsequent experiments have verified these observations. He concludes from these facts, that the blood of the umbilical vein is more oxygenated than that of the arteries; and that the placenta is an organ for the formation of the blood.

Again, the fœtal bile is the same as the adult, though a little more liquid. Hence, the liver acts the same in the fœtus as the adult. It has for its purpose the decarbonizing of the blood, and giving the child a quantity of that super-oxygenated product, glucose. Thus the liver becomes indirectly an organ of sanguification, though it does not play the part of lungs or gills during intra-uterine life.

Hence, we may conclude the placenta to be a sort of pediculated gill, an organ of absorption, nutrition, and respiration.—(*Gazette Hebdom.*, February 1, 1861.)

VII.—*Phenomena of Lumbo-Sacral Neuralgia simulating Idiopathic Affections of the Uterus and its Appendages.* By Dr. Marotte, Paris.

Among the phenomena which are observed in the unimpregnated uterus, the most important is leucorrhœa, a very common affection of cities, and one which is so often connected with disease of the uterus that its neuralgic origin often remains doubtful. It is even notable that in many cases where it is prominent, the neuralgia is not the sole cause—chlorosis, weakness, etc., so favorable to neuralgia, will also produce this discharge. But there are cases where the leucorrhœa is so evidently connected with the pain at its origin, its exacerbation and returns, that no doubt can be entertained.

According to Dr. Marotte, the principal characters of this leucorrhœa are—1st. The sero-mucous or mucous nature of the discharge. The neuralgic leucorrhœa really consists of a transparent, viscous secretion, analogous to a thick solution of gum or starch. 2d. The connection existing between its appearance and its variations in quantity and those of the pains; it seems to increase, or even completely disappear with them. If the patient is subject to a leucorrhœa, the discharge may not cease when the pains disappear, but it always augments with them. The absence of any lesion of the uterus, and the existence of a lumbo-uterine neuralgia, completes the diagnosis.

The special phenomena of the leucorrhœa do not generally demand any other treatment than that for the neuralgia which it accompanies; however, in chronic cases the feebleness causes it to survive the absence of the neuralgia, and then it is necessary to combat it with iron, astringents, or other special agents.

Along with the leucorrhœa there is also an unusual secretion in the genital organs, a gas, of which the nature is not yet determined, and which escapes from the vagina in certain females attacked with lumbo-uterine neuralgia. This is of rare occurrence; it is neither permanent nor abundant like the liquid excretion; it is discharged, from time to time, suddenly, and like an explosion, which relieves the patient, for it is often preceded by uneasiness. Some have this but once; in others, it is repeated. It is necessary to remark here, that Dr. Newcourt has met with females who complained of this expulsion of gas from the vulva, and hence this may occur in the absence of lumbar neuralgia. By touch and a speculum examination, these cases do not generally present any changes in the volume, consistence, or color of the womb; it does not appear to be the seat of any active congestion. Cases are, however, encountered, where the neck is red and swollen, and the lips of the os are introverted. This is seen principally in the acute neuralgias. The congestion spreads even to the vagina and the vulva, if these parts are painful. There is also a chronic form, especially at the time of the inception of the menstrual discharge, and oftener when it is suspended. Dr. Marotte believes that repeated attacks may cause engorgement, hypertrophy, or even a fungous state, which may take the place of the neuralgia.

The congestions are distinguished from the acute stage of metritis by the absence of fever, local heat, the disproportion of the congestive phenomena with the pain, which is sharp, exacerbating, and confined to the nerves of the pelvis and abdomen.

In the chronic state the diagnosis is less easy; however, the absence of heat or any lesions which should be present either in the body or neck in chronic metritis, and finally, the results of the treatment will make it clear.

Another most curious and important peculiarity of this form of neuralgia is metrorrhagia. In some cases the loss of blood is small, and made up of pure blood and sanguineous serosity; these are least numerous, but, at the same time, it is most difficult to connect the hemorrhage with its true origin, because it is generally accompanied by dull pains and without marked twitchings. The loss of blood, sufficiently abundant to constitute true hemorrhages, may form a complication and become a source of weakness by their quantity and duration. Whether abundant or moderate, the metrorrhagia is a special characteristic. The course of these discharges is always irregular, augmenting, diminishing, or ceasing from one day to the next, and often in the same day, without any apparent reason, except their relation with the pains.

The menstrual discharge renews the pains when they have recently ceased, and exaggerates them when present. At the same time the pains often become tenesmoid, which supposes a spasm of fibres of the uterus, and causes a dysmenorrhœa. This is especially seen in young girls and females who lose but little blood, and have never been pregnant, and particularly in chronic cases. In the great majority, this affection exaggerates the menstrua.

In addition to the difficulties of diagnosis, we may have with this neuralgia a hard, frequent, and small pulse, resembling that of peritonitis. In the pregnant state the symptoms are the same, and the hemorrhage, etc. may cause expulsion of the fœtus. This disease may also render the labor very painful and delay the dilatation, when it may cease, or even continue, and produce very severe after-pains.—(*Archives Gen. de Méd.*, Avril et Mai, 1860; *Gaz. Heb.*, September 21, 1860.)

VIII.—*Cauliflower Excrescence of the Os Uteri Removed by the Ecraseur.*

By DR. J. BRAXTON HICKS.

The patient, aged forty-seven, of a sallow complexion, and weakened health, had been regular in her functions until the last five months, when the natural discharge was replaced by a watery one, mixed with considerable quantities of blood expelled upon any exertion. She suffered much with pain in the loins. On examination, a growth the size of a small orange was found attached by a pedicle to the posterior lip of the os. It was flattened where it pressed on the rectum, and so soft that the finger could readily penetrate it, causing severe hemorrhage. The operation was performed by bringing the cervix down within the reach of the ecraseur by the double canula and whipcord. The latter was then removed, and the pedicle slowly divided. No hemorrhage or bad symptoms followed. It proved to be a well-marked cauliflower excrescence.—(*Med. Times and Gaz.*, November 17, 1860.)

IX.—*Treatment of Leucorrhœa.* By Dr. Pockels.

In leucorrhœa from a chronic stasis of the uterus, with considerable textural changes or syphilis, Dr. Pockels has found very beneficial results from the use of secale cornutum and catechu; giving of each as much as will lie on the *point of a knife*, three times a day—the catechu being as serviceable as the more expensive tannic acid. If there is anæmia, phosphate of iron is added; and alkalies when acidity of the stomach prevails. An increased secretion of mucus is at first produced, and this may have some blood mixed with it when chronic hydræmia is present.—(*Varges Zeitschrift; Maryland and Virginia Medical Journal*, November, 1860.)

X.—*Treatment of Uterine Inflammation by Injections, External Applications, etc.* By Edw. J. Tilt, M.D., London.

Injections are of great value in inflammations of the womb, but require care, in order that their full effect may be obtained. As they are mere lotions to internal organs, the tube of a large syringe, say one or two pints, should be introduced as far as possible without giving pain, in order that the whole lower part of the womb and the entire vagina may be acted on. The patient should be in a reclining position, on a hard sofa, and the liquid injected, and reinjected for at least five minutes; the temperature of the fluid should be warm or tepid in the acute stage, afterward cold. Emollient injections range thus: water, milk and water, linseed tea, solutions of borax, chlorate of potassa, acetate of lead, alum, alum and zinc, zinc alone, decoctions of oak bark, etc. One drachm of the saline compound to a pint of water, and only ten to twenty grains of sulphate of zinc when used alone. Emollients may be used three times a day; cooling twice; antiphlogistics, as alum, only once; astringents two or three times. One drachm of laudanum may be added to each injection when pain is felt. After cure, continue for awhile. Generally, it is best to cease during the menstrual period; but if there is obstinate ulceration, or vaginitis, the medication may be continued. If internal metritis protracts the flow, after it has lasted the usual time, check it by alum and zinc, first tepid and then cold, two or three times a day. Alum injections too long continued, as a preventive of uterine inflammation, have produced irritable subacute inflammation of the os; hence, when astringents are long required, as to enable a relaxed vagina to support the womb, use on alternate days alum and zinc, and acetate of lead. A vagina suppository, to be used at night, may be made with ten grains of acetate of lead and one or two of extract of belladonna. After touching an inflamed cervix with nitrate of silver, it may be *dressed* by pressing up through the speculum one or two tablespoonfuls of starch or rice powder. Externally, in acute inflammations, linseed meal poultices, sprinkled freely with laudanum, may be applied every two hours. Or, half an ounce of an ointment of two drachms of extract of belladonna to an ounce of mercurial ointment may be smeared over the abdomen, and covered with a poultice, both renewed every two hours, while calomel and opium are given internally. Flannels wrung out of hot water, sprinkled with laudanum, and covered with oil-silk, will suit some patients better; or well-heated bags of salt or bran. As inflammation abates, reserve these for the night, or camphorated oil may be rubbed in twice a day and covered with cotton wool. In the chronic stage, foment with hot water, and then apply the cold water compress to the abdomen, covered with oil-silk, renewed when it becomes warm.

Baths.—In acute peritonitis, the moving necessary for a warm bath does more harm than good; but this is of great value after the subsidence of the acute symptoms. In acute internal metritis, the hip-bath, at 96° or 98°, for three-quarters of an hour each night before bedtime, quiets pain better than opium. This is useful also in chronic cases and acute affections of the cervix. The whole bath is also invaluable. In all chronic inflammatory conditions of the body and neck of the womb, cold hip-baths are useful, taken immediately on getting out of bed, remaining in two or three minutes, so as to have the benefit of the reaction, without which it is dangerous. In winter the temperature should be 60°. When cold hip or shower baths cannot be borne, sponge alternately with very hot water and water at 60°.

He protests against the use of mercury blindly in obscure cases, and only employs it in syphilitic cases. In hard hypertrophy of the cervix, he prefers iodine and its preparations, both locally and internally.

Counter-irritants.—In chronic affections, he produces pustulation of the skin by croton oil or tartar emetic, or cauterizes with the metallic cautery. For sickness attending uterine disease, he applies an issue to the pit of the stomach, curing when all else fails. In catarrhal affections of the cervix, he has found direct blistering useful; rubbing the neck of the womb two or three times with a brush dipped in a concentrated solution of cantharides in sulphuric ether, mixed with the ordinary solution of gutta-percha in chloroform, in the proportion of two parts of the former to one of the latter.

Dietetics.—In acute attacks, the horizontal position is imperatively required. But in the chronic form, gentle exercise is requisite, gradually increased.

Sedatives.—On this head, he has arrived at these conclusions: an occasional large opiate by the mouth may be useful, but its frequent repetition obscures the case, constipates, and causes opium eating. Sedatives are best administered by the rectum in suppositories or warm milk, thus quelling pain without narcotizing; which would be liable to accelerate the disease. Opiates are advantageously given by the vagina, in suppositories or injections, and hysteralgia is sometimes cured by leaving one or two grains of acetate of morphia in contact with the neck of the womb every third or fourth day. Neuralgic symptoms are often relieved by adding opiates to poultices, ointments, and liniments. Other remedies failing, opiates may be applied to the raw surface of the blistered skin, or injected into the cellular tissue.

Nitrate of silver, etc.—It is often necessary to preface this remedy by linseed tea, or other cooling injections. If the solid nitrate increases too much the habitual pains, or causes the ulcerations to bleed for two or three days, it is well to try a solution of forty to sixty grains. This may require a repetition every three or four days. Sometimes he uses a solution in the strength of one ounce of the salt to two or three ounces of distilled water as an application to ulcerated surfaces. Chronic uterine catarrh, or inflammation of the mucous membrane of the cervix, without the slightest abrasion, the membrane of a dusky, livid hue, tender, and secreting pus, may last for years, but generally leads to denudation of the villi, and gives an excoriated appearance. This, with or without excoriation, can be cured by the solution every fourth day, and the solid nitrate occasionally. In obstinate cases, a small portion of the solid stick may be left in the canal.

In vaginitis, the injection is best. The patient should be placed on her back, a small glass speculum introduced as far as possible, and an ordinary glass syringe, full of a solution of forty grains to the ounce, injected. The fluid should be left in contact for five minutes, and then received in a cup. Sometimes as he withdraws the speculum he freely touches the vagina with the solid nitrate diluted by chloride of silver. Especially are these injections applicable in virgins, where a moderate-sized speculum cannot be introduced.

In consequence of the serious accidents following the injection of this article into the womb, he prefers tincture of iodine in solution as an intra-uterine injection. In follicular inflammation of the labia, in eczema and prurigo, or pruritus, external or internal, cotton wool should be soaked in the solution of the nitrate of silver, and carefully rubbed over the diseased surfaces for a few minutes. Even where the disease had existed so long that the pudendal skin felt like parchment, this rubbed in every day, then every other day, then every fourth day, the skin became soft and pliable, and all pain disappeared in a few months.

His experience teaches him that this agent *is not a caustic;* it only condenses tissues, without reducing their bulk. It may cause stricture, but only by this action.

Tincture of iodine suits some idiosyncrasies better, and may be used in the strength of one drachm to an ounce of distilled water. It is much less useful than the nitrate of silver.

Ulceration of the cervix may be much shortened by one or two applications of acid nitrate of mercury or potassa cum calce. In fungous and varicose ulceration, these remedies stop the bleeding and promote the cure. In diphtheritic inflammation of these parts, nitrate of silver acts as a poison, but the potassa cum calce effects a cure.—(*Lancet*, Feb. 2 and 23, 1861.)

XI.—*Chlorosis, especially in Children.* By M. NONAT, of Paris.

Dr. Nonat, from his reflections on the above subject, arrives at the following conclusions:—

Chlorosis is a native, original affection, which precedes functionally a lowering of the blood-making power. It is essentially distinct from anæmia; these two affections differ in their etiology, their alteration of the blood, the progress of the symptoms, and their treatment. Chlorosis constitutes a morbid unity; is always idiopathic. It does not belong exclusively to women; we observe it in men, but less frequently. Far from being the consequence of a suppression or retention of the menses, it is most often the cause of these accidents. We meet with it in all periods of life. It is very frequent in children. It exercises a prejudicial influence on the development of the organism, and plays a great part in the production of diseases, and contributes to lessen their progress and prolong convalescence. Iron is not a specific for this affection, as mercury is for syphilis, and quinine for intermittents. Chlorosis is cured spontaneously with age, in consequence of the regular development of the organism. Nevertheless, it is necessary to give the ferruginous preparations, which constitute, at present, the most efficacious auxiliary medication.—(*Cincinnati Lancet and Observer*, November, 1860.)

PHYSIOLOGY.

BY S. WEIR MITCHELL, M.D.,

LECTURER ON PHYSIOLOGY IN THE PHILA. MED. ASSOCIATION.

I.—*Rapidity of the Circulation in the Arteries of the Horse, as indicated by a new Hemodrometer.* By MM. A. Chauveau, G. Bertolus, et L. Laroyenne.

M. Chauveau, dissatisfied with the researches of Volkmann, Huttenheim, Vierordt, Bernard, etc., has constructed a novel form of instrument, designed to exhibit to the eye the rate and power of the arterial current. M. Chauveau accidentally observed that a needle, thrust through the wall of the carotid artery of the horse, moved freely with each passing wave of blood, and again recovered its position under the influence of the elasticity of the arterial coats. To utilize the indications thus offered to the eye, M. Chauveau made use of the following means:—

A short metal tube, of the size of the artery to be examined, was pierced with a hole, over which was stretched a tense caoutchouc membrane. Through this membrane ran a flattened needle, whose exterior extremity traversed a dial-plate attached to the tube. When this tube, thus arranged, was made to replace a part of the artery of a living animal, the moving blood, pressing on the portion of the needle within the tube, caused it to move, and so to register on the dial the extent and character of the forces thus acting within the tube. An opening at the side of the tube permitted the observer to attach to it a manometer, and thus to observe also the pressure of the blood. A series of most interesting experiments was made with this instrument, from which the following conclusions were deduced:—

1. During a single heart-act, (systole, diastole, and pause,) the swiftness with which the blood moves undergoes changes not as yet completely studied.
2. During the heart's systole, the blood of the carotid artery (the vessel chosen for experiment) is put abruptly in motion, with a speed which is relatively considerable.
3. At the end of the ventricular systole, in the moment which immediately precedes the closure of the semilunar valves, the movement of the blood decreases with great rapidity, and may even become altogether null.
4. At the moment when these valves are closed, the circulation experiences a slight acceleration.
5. After the closure of the semilunar valves—that is to say, during the repose of the ventricles—the slight acceleration imparted to the blood current by the dicrotic pulsation, due to the occlusion of the aortic orifice, decreases usually with a certain slowness, since the needle, after this second deviation, does not return suddenly to the zero of equilibrium, or to its neighborhood.

6. At the close of the ventricular diastole the carotid circulation is always inactive, and sometimes appears to be perfectly at repose; the needle at this moment being but slightly, or not at all, deviated from its position of equilibrium.

After pointing out certain facts, which were noticed only in a few of their experiments, the observers relate the means by which they have studied the rapidity of the circulation, and determined that the average rate of speed of the blood in the carotid of a horse is—

During the systole, fifty-two centimetres per second, *i.e.* twenty inches and a half.

During the secondary pulsation, (time, closure of semilunar valves,) twenty-two centimetres, *i.e.* eight inches and seven-tenths.

At the end of the period of repose of the ventricles, fifteen centimetres, *i.e.* five inches and nine-tenths.

In connection with the last valuation, it is proper to add that in some cases the circulation appeared at complete rest during the moment which preceded the ventricular act.

The circulation in a small arterial branch differed from that in the large trunks in the following particulars:—

It was very active, even at the close of the ventricular diastole. The systolic acceleration was relatively much more slight. The acceleration due to the semilunar pulse (la pulsation sigmöide) was feeble, or did not exist at all.

When the glands and muscles of the head, *i.e.* those engaged in mastication, and in salivation, become functionally active, the carotid circulation attained an enormous swiftness, so that five or six times the usual amount of blood was then carried by that vessel.

The authors are of opinion that the condition of the glands when secreting is largely accountable for this curious fact; and they refer to the well-known experiments of M. Bernard, showing that when the submaxillary gland is made to functionate, owing to an irritant having been applied to the chorda tympani nerve, the blood of the veins coming from the gland flows in greatly increased amount.

The influence of hemorrhage, and of division of the pneumogastric and sympathetic nerves, are also the subjects of further experiments. In regard to this latter subject, the authors remarked a notable increase of the rate of circulation in the carotid; and they also observed the same elevation of temperature which M. Bernard and others have perceived. M. Bernard has always held the opinion that this increase of heat was not due alone to the sur-activity of the local circulation, induced by paralysis of the sympathetic nerve, as Dr. Brown-Séquard has contended. M. Chauveau and his companions in the present research seem to incline to the former view, and in support of it urge the fact that the enormous increase in the local circulation which occurs during mastication does not elevate at all the temperature of the face.—(*Journal de la Physiologie*, Oct., 1860.)

II.—*A Peculiar Form of Deafness.*

At the meeting of the Academy of Sciences on the 8th of January, M. Ménère read a memoir upon "a peculiar form of severe deafness, depending upon a lesion of the internal ear." The subjoined are the conclusions with which he summed up the paper:—

1. An auditory apparatus, up to a certain time perfectly sound, may suddenly become the seat of functional disorders, consisting in noises of a variable character, either continuous or intermittent, and these noises are accompanied by more or less diminution of the sense of hearing.

2. These functional derangements, having their seat in the internal ear, may give rise to complications which may be attributed to cerebral disorders, such as vertigo, bewilderment, uncertain gait, giddiness, and falling; and they may, in addition, be accompanied by nausea, by vomiting, and by a syncopal condition.

3. These complications, which assume an intermittent form, are soon followed by deafness, increasing in intensity; and the hearing is even frequently suddenly and completely extinguished.

4. Everything which has hitherto been ascertained respecting this form of disease leads to the belief that the material lesion which is the cause of these functional derangements is situated in the semicircular canals.—(*London Medical Review*, February.)

The above communication calls forth a note from M. Brown-Séquard on the production of cerebral symptoms as a consequence of lesions of the auditory nerve.

I. I have found that in the batrachia the slightest wound of the auditory nerve suffices to produce the following phenomena:—

1st. A peculiar state of the anterior limb of the opposite side; the member being almost constantly held in contraction, owing to contraction of some of its muscles and paralysis of others.

2d. A marked degree of hyperæsthesia of the skin. These phenomena last during the life of the animal.

Section of the semicircular canals in the batrachia does not produce any of these phenomena unless the auditory nerve has been injured. This nerve, contrary to the views of Müller and Magendie, that some nerves of special sensation are devoid of sensibility, is almost as sensitive in batrachia as the fifth pair.

II. Pricking or section of the auditory nerve in mammals is followed at once by rotatory movements such as follow injuries of the middle peduncle of the cerebellum. The sensibility of the same side of the body is also notably increased by the operation. In the rare cases which survive this operation, a slight paralysis of the side of the body operated on is apt to remain, and rotatory movements are easily reproduced by very slight excitants.

III. Pathological facts observed by R. Bright, by Walter Lincke, Burggrave, and more recently by Hinton, show the influence of lesions of the auditory nerve within the internal ear upon the encephalon. Convulsions, vertigo, and rotatory movements have been observed in cases where the brain was so healthy that it was only possible to regard the phenomena as sympathetic or reflex, and as excited by the lesions of the nerve of hearing.

From these pathological results, from my own experiments, from the effects of a cold injection thrown into the ear, and from the remarkable effects produced by sudden sounds on all nervous or feeble persons, I conclude that the auditory nerve has the power to produce, by reflex agencies, convulsions, vertigo, and other symptoms of disturbed encephalic functions.—(*Gaz. Hebdom.*, Jan. 25, 1861.)

III.—*On the Cerebellum as the Centre of Co-ordination of the Voluntary Movements.* By JNO. C. DALTON, JR., M.D.

Dr. Dalton has observed, that in a few cases where in birds he had destroyed a large part of the cerebellum, the bird recovered and reacquired the power of co-ordinating its muscular acts. He thus describes an experiment and its results. In the month of January, 1859, I removed from a young but well grown male pigeon, while under the influence of ether, the upper and middle portions of the cerebellum, constituting about two-thirds of its entire mass. Immediately afterward the pigeon showed all the usual effects of the operation, to a very marked degree. He was incapable of walking, of flying, and even of standing still, but struggled and sprawled about, exactly as other pigeons had done when subjected to a similar mutilation. This pigeon, contrary to my expectations, survived, and, in the course of a few days, it was evident that it was recovering the control of its limbs. Its recovery continued to go on at the same time with the general re-establishment of the animal's health; and at the end of five or six days it was again very nearly capable of executing all its natural motions. Its appetite was also restored, and it ate and drank freely as before the operation. The pigeon lived sixteen days, and at the end of that time, when it was killed intentionally by decapitation, there was no apparent reason why it should not have survived indefinitely, since its health, to all appearance, was thoroughly re-established. Its appetite and digestion were good. Its voice was natural in force and tone, and its power of muscular *co-ordination* was so nearly perfect that its deficiency, if any existed, was practically inappreciable. The only peculiarity remaining was a moderate general debility, not noticeable, except when the animal made some unusual exertion. Thus, when he flew off a high perch unto the floor, he found some difficulty in alighting, and generally tumbled forward on his face as he struck the ground, but he always recovered himself immediately and resumed a natural position.

On examination, after death, the wound in the integuments, skull, and membranes, was found to be in rapid process of healing. There was no reproduction of any part of the cerebellum.

Dr. Dalton relates several additional instances analogous to that above recorded, but in which less of the cerebellum was lost. Dr. Dalton thinks that these experiments militate against the views of Flourens, which attribute to the cerebellum the co-ordinating power as regards voluntary muscular movement.—(*Am. Jour. Med. Sci.*, January, 1861, p. 83.)

IV.—*Critical and Experimental Researches on the Function of the Brain.* By R. WAGNER.

After destruction of the surface of the cerebellum in pigeons, Wagner observed that there was a tendency to atrophy and absorption of the white matter, which might go on to entire disappearance of the cerebellum, down to the gray nuclei of the cerebral peduncles, (the analogues of the corpora cerebelli.) Small losses of substance, or removal of superficial slices of the cerebellum, with protection of the deep, anterior, posterior, and lateral convolutions, a loss of substance of 70–80 mgrm., often produced no disturbance at all, provided that tearing (zerrungen) was as much as possible avoided. When destruction of the deeper parts was effected, disturbances in movement occurred, which, however, disappeared after a time, ranging from hours to days. Wagner (as also Schiff) believes that this disturbance of the "co-ordination of movement" is not dependent on the cerebellar loss of substance, but upon the tearing of more deeply situated parts, in the performance of the operation. When he succeeded in keeping alive, for weeks or months, pigeons whose cerebellums were completely or in a great measure destroyed, Wagner observed three phenomena, viz., an increasing tendency of the posterior extremities to extension, which was made particularly manifest in a reflectory manner, just as in strychnine poisoning; further, an increasing contortion of the head and neck, so that the latter describes a spiral; lastly, a peculiar quivering of the greatest part of the muscular system, resembling paralysis agitans, and increased on touching the animal. After deep injury of the cerebellum, vomiting was a frequent symptom, also thin, watery fæces. Both of these symptoms also occur in deep injury of other parts of the brain. Digestion is by no means quite suspended after deep injury of the cerebellum, but goes on more slowly and imperfectly. In regard to other general disturbances, of nutrition, of the activity of the skin, heat, etc., Wagner feels doubtful if they depend directly upon the injury of the cerebellum, but holds it as probable that a part of the vaso-motory nerves is represented in that organ. As to the generative system, Wagner could observe no influence of the cerebellar injuries upon it.

In mammals Wagner found confirmed the fact, that mechanical irritations of the cerebellum call forth movements in the organs of the vegetative sphere, in the stomach, intestines, urinary, and sexual organs, also changes in the heart movements. Wagner, from his clinical experience and knowledge of diseases or injuries of the cerebellum, observes that disturbance of equipoise and imperfect staggering motion occur frequently in men with diseased or deficient cerebellums. Further, that rotary movement may also be observed in such cases. Among the most frequent symptoms are paralysis of motion in the extremities, generally in those of the opposite half of the body, or paresis on both sides. It is questionable if these paralytic affections are due to the cerebellar lesion, or are the consequence of pressure on other parts. Paralysis of sensation does not occur, but cramps of the extremities, and epileptic symptoms do; the first in cases of further complication, the last after various injuries of the brain; also general or partial quivering. Vomiting of a periodic character, and symptoms of disturbed digestion, are frequently present. Disturbances of sensibility, pains, particularly in the posterior parts of the head and neck, Wagner recognizes as the most constant symptoms of diseases of the cerebellum. On the whole, he finds a great agreement between the symptoms in man, in other mammalia, and in birds, in regard to the cerebellum, which may, therefore, be considered as physiologically equivalent in warm-blooded animals, without any detriment to the modifications founded upon particular relations of organization.—(*Zeitschr. für Rationelle Medicin; Edinburgh Medical Journal*, January, 1861, p. 234.)

V.—*On Uræmic Intoxication.* By WM. A. HAMMOND, M.D., Professor of Physiology and Anatomy in the University of Maryland.

In the memoir entitled as above, Dr. Hammond relates an elaborate series of experimental researches designed to clear up some of the unsettled questions as to the effects of the accumulation of certain of the urinary elements in the blood. Dr. Hammond considers that the most important of these mooted points is, whether carbonate of ammonia from the decomposing urea, as Frerichs has urged, is the cause of the condition now known as uræmia. After criticising Frerichs's views, by means of a succession of well-planned and ingenious experiments, Dr. Hammond examined the whole subject anew, in an additional series of experiments, and by their aid arrives at the following conclusions:—

1. That the injection of urea, in limited quantity, into the blood of animals produces a certain amount of disturbance in the nervous system, similar in its symptoms to the first stages of uræmia, but that this condition disappears if the kidneys are capable of so depurating the blood as to eliminate the toxic substance.

2. That urea, when introduced into the circulation in larger quantity than can in a limited period be excreted by the kidneys, induces death by uræmia.

3. That by ligature of the renal arteries, or removal of the kidneys, the elements of the urine being retained in the blood, render this fluid unsuitable to the requirements of the organism, and, consequently, induce a condition of system not essentially distinguishable from the uræmic intoxication of Bright's disease, or that caused by the direct introduction of urea into the blood. As, however, was pointed out by Bernard and Barreswil, so long as the urea, or the products of its metamorphosis, are discharged by the stomach or intestines, uræmia does not take place, but that when these channels become closed, convulsions and coma are produced, and death soon follows.

4. That the introduction of urea or urine into the circulation of animals, the kidneys of which have been ablated, shortens the life of such animals, as Frerichs and others have already shown.

5. That there is reason to believe that the urine, as a whole, is more poisonous than a simple solution of urea, for, in those cases in which urine was injected into the blood, the amount of urea thus introduced was much smaller than that previously thrown in, in a pure state, and yet symptoms of as great intensity followed.

6. That urea or the elements of urine, as a whole, induce such a condition of the nervous system as strongly to predispose to congestion and inflammation of the viscera, especially the lungs, pericardium, and spleen.

7. That urea, when directly injected into the blood, or suffered to accumulate in this fluid by extirpation of the kidneys, deranges, in some manner, the process of sanguification, so as to disturb the normal relation of proportion existing between the white and red corpuscles, and either to hasten the decomposition of these latter, or to interfere with the due removal from the blood of such as are broken down and effete.

8. That there is no reason to suppose that, under the circumstances specified, urea undergoes conversion into carbonate of ammonia, but that, on the contrary,

there is sufficient evidence to warrant the conclusion that no such process ensues. The fact that in the foregoing experiments a larger amount of urea was generally found in the blood taken from the body after death than in that abstracted during life is, of itself, conclusive against any such hypothesis.—(*Am. Journ. of Med. Sciences*, Jan., 1861.)

VI.—*Experimental Researches Relative to a Supposed New Species of Upas.*

By WILLIAM A. HAMMOND, M.D.

Dr. Hammond gives an interesting history of the two kinds of upas, now known to toxicologists as *Upas antiar* and *Upas tieute.* He quotes the experiments of Leschenault, Magendie, Brodie, etc., to the effect that U. antiar kills by paralyzing the heart, like corroval and vao, the South American arrow poisons, while U. tieute causes the most violent convulsions. In accordance with this, MM. Pelletier and Caventou discovered that the active principle of U. antiar was a new alkaloid, (antiarin,) while U. tieute owed its activity to strychnia. The recent experiments of Prof. Kölliker on U. antiar corroborate the views of the older observers, and discover a striking analogy in the action of U. antiar to corroval and vao.

The upas examined by Dr. Hammond came from Singapore. It was of a dirty-green color, and fæcal odor, and contained strychnia. Upon giving the poison to frogs it caused death with tetanic convulsions: suspecting that some other cause than tetanus was engaged in producing death, Dr. Hammond gave the upas to a frog, and then laid bare the heart. Within five minutes the heart stopped. Meanwhile the frog continued to leap about with unusual vivacity up to the 7th minute, when slight tetanic convulsions took place, and, increasing in violence, caused death at the close of half an hour after the heart stopped.

The upas examined by Dr. Hammond had then the power first to check the heart's acts, and then to cause tetanus. These facts at first led to the idea that it was a mixture of U. tieute and U. antiar, but although it was found to contain strychnia, the other poisonous element which the author obtained from it was not identical with antiarin. This upas cannot, therefore, be looked upon as a mere mixture of those now known.

Dr. Hammond observed that, when taken internally, the action of the two ingredients was reversed as to time, and the tetanus came on first—the heart only ceasing to beat somewhat later. This effect was probably due to a difference in the readiness with which the two poisons were absorbed from the stomach. When, for example, ten drops of a solution of the poison was placed in the stomach, and after a few minutes washed out of the organ, tetanus came on—but the heart continued to beat for several hours.—(*Am. Journ. Med. Sci.*, Oct., 1860, p. 363.)

VII.—*Schmidt and Stürzwage on the Influence of Arsenious Acid on the Metamorphosis of Matter.*

Schmidt and Stürzwage examined, in common fowls, pigeons, and cats, the influence of arsenious acid on the metamorphosis of matter. They found that small doses of arsenious acid caused a considerable diminution in the excretion of carbonic acid and urea, (from twenty to forty per cent.,) indicating a marked diminution in the metamorphosis of matter. This effect is produced more rapidly when the arsenic is injected into the veins; more slowly, but not less intensely, when it is introduced into the digestive canal. This diminution of the change of matter the authors regard as the cause of the increase of weight in horses treated with small doses of arsenic.—(*Moleschott's Untersuchungen*, vol. vi. p. 283; from *British and Foreign Medico-Chirurgical Review*, Jan., 1861, p. 229.)

VIII.—*Zimmerman on Richardson's Hypothesis Regarding the Cause of the Coagulation of the Blood, and some other Views Regarding Fibrin.*

Zimmerman considers Richardson's explanation regarding the cause of the coagulation of the blood as insufficient. Although he does not deny that the volatile ammonia contained in the blood, lymph, and chyle may have some influence on their fluid state, yet their coagulation, he argues, cannot be attributed to the escape of the ammonia, because the blood coagulates in spite of this substance; as, for instance, when blood has been received under mercury and oil, or even after a small quantity of caustic ammonia has been admixed, in which case, although it does not coagulate at once, yet it does so after some hours, when there is still distinct proof that the ammonia has not yet escaped. The theory in question, the author states, is further inadequate to explain the majority of those coagulations which occur in the living body. Zimmerman's own theory is, that the process of coagulation is caused by the formation of a catalytic substance (*contact-körper*) which affects a molecular change in the fluid fibrin, disposing the latter to pass into the solid state. The author cannot give an accurate description of this catalytic substance, but thinks that it exists and remains in a dissolved condition, and that it has only, *in statû nascenti*, the power to act, *per contactum*, on the fibrin.—(*Zeitschr. für Rat. Med.*, vol. viii. p. 304, 1860; from the *British and Foreign Medico-Chirurgical Review*, Jan., 1861, p. 229)

IX.—*Experimental Inquiry into the Composition of some of the Animals fed and slaughtered as Human Food.* By LAWES and GILBERT.

Regarding the *increase* of the weight of animals during the last months of fattening, it is estimated to contain in oxen from 70 to 75 per cent. of total dry substance; of which 60 to 65 parts are fat, 7 to 8 nitrogenous substance, and 1 to 1½ mineral matter. Similar are the proportions in sheep and pigs, but the percentage of fat is larger; that of nitrogenous substance and mineral matter smaller. In many instances the authors have exactly determined the amount and composition of the food consumed during the fattening process, and have compared it with the constituents estimated to be stored up in the increase. Thus they found that in sheep, for 100 of collective dry substance of food consumed, there will be about 9 parts of dry matter in the increase stored up. Of these about 8 parts are fat, and only 0·2 part mineral matter and 0·8 nitrogenous compounds. The average of all estimates relating to pigs showed, for 100 parts of dry matter, food consumed, 17¼ parts of dry increase; of which 18¾ parts were estimated as fat, and rather more than 1⅓ part nitrogenous substance. The authors especially mention the important fact that "there were four or five times as much fat stored up in increase as there was of fatty matter supplied in the food." There was, therefore, obviously a *formation of fat* in the body. On the whole, by the fattening of animals, the proportion of the nitrogenous compounds of the entire body is diminished, and that of fat is increased.—(*Proceedings of the Royal Society*, vol. ix. p. 348, 1859; from the *British and Foreign Medico-Chirurgical Review*, Jan., 1861, p. 225.)

X.—*On the alleged Sugar-forming Function of the Liver.* By PAVY.

Pavy's recent communication to the Royal Society, on the alleged sugar-forming function of the liver, contains, besides a confirmation of the results of his former experiments, some additional matter. Thus he shows by analysis that although the blood collected from the right side of the heart after death, as was formerly done, affords an abundant indication of the presence of sugar, yet, that when it was removed from the same part by catheterism during life, it is found to contain but a trace of the saccharine principle. Inferences, therefore, having been drawn regarding the ante-mortem state, the author argues, from the post-mortem examinations, must be abandoned as erroneous. Pavy reminds us, at the same time, that slight causes, as disturbance of the respiration, are sufficient to induce a strongly diabetic urine; that therefore a fair specimen of blood from the right heart can only be obtained when the animal is in a quiet state during the performance of catheterism.

Pavy's experiments on rabbits led to the same results as those previously performed on dogs: viz., that injection of starchy and saccharine matter is followed by a great accumulation of hepatine (the sugar-forming substance of Bernard and others) in the liver. While sugar diffuses easily through animal membranes, hepatine has a very low power of diffusion. This opposition strengthens the author in his view that hepatine is not normally transformed into sugar in the living organism. Pavy finally communicates that, after the introduction of large quantities of carbonate of soda into the blood, lesions of the sympathetic system do not cause diabetes.—(*Proceedings of the Roy. Soc.*, vol. x. p. 528, 1860; from the *British and Foreign Medico-Chirurgical Review*, Jan., 1861, p. 231.)

MATERIA MEDICA AND THERAPEUTICS; MEDICAL CHEMISTRY; TOXICOLOGY AND LEGAL MEDICINE.

BY EMIL FISCHER, M.D.

MATERIA MEDICA AND THERAPEUTICS.

I.—*On Anacahuite Wood.* By JNO. M. MAISCH. (American Journal of Pharmacy, March, 1861.)

Note on Anacahuite Wood, a Reputed Remedy for Consumption. By DANIEL HANBURY, F.L.S. (London Pharmaceutical Journal, February, 1861.)

1. "Some time in August or September last, the New York *Criminal Zeitung* published a correspondence from Berlin, Germany, which contained a statement to the effect that the Prussian consul at Tampico, Mexico, had notified his government of a wood, which is called there anacahuite, and is extensively employed with the most beneficial results in tubercular consumption. This report

was considered by the government of Prussia of sufficient importance to determine on testing its efficacy in the Charité, the celebrated hospital in Berlin. The wood, it is asserted, is rare in Mexico, and the agents of Prussia have seized upon it to such an extent that it is now difficult for others to obtain.

"A subsequent correspondence of the above-mentioned paper, dated Berlin, October 5th, 1860, stated that the experiments with the anacahuite wood had, as yet, not led to a satisfactory result, but that they were to be continued, because it was hardly to be expected that the consul should have made such positive assertions without being satisfied of their correctness; it was added that guaiac wood had, by some druggists in Germany, been fraudulently sold instead of anacahuite.

"The *Criminal Zeitung*, of February 1st publishes a paper by Dr. Krog, of New York, formerly of Berlin, which appears to be of so much interest as to warrant its translation for the American Journal of Pharmacy.

"'During the summer of the past year, when the above wood was first brought to Europe, the writer has had the opportunity to observe its effects in the Berlin Charité, and to satisfy himself of the unusually favorable results. The first experiments did not prove to be so effectual as was expected, and it was supposed that a part, at least, of the alleged excellent success in Mexico must be ascribed to its climate; but subsequently it became evident that this difference was to be accounted for by the mode of preparing the wood. A simple infusion is not sufficient to extract the active principles; and heating to boiling will not entirely accomplish the object, which is attained only by continuing the boiling for a quarter or half an hour. Such a decoction has proved very efficacious; it produced the complete resorption of the tubercles in the first stage of consumption, and afforded great relief of their distressing condition to those further advanced. These facts suffice to make it desirable that this remedy might be extensively employed here for the benefit of the numerous patients of this class.'

"Such information, coming from a medical man who had witnessed the experiments, is entitled to consideration, and in view of the importance of the subject, I asked for further information, and received the following letter, which speaks for itself.

"'NEW YORK, Feb. 5th, 1861.

"'DEAR SIR:—In reply to your favor, I hasten to inform you that the anacahuite wood certainly merits the attention which it has lately received. My experience chiefly extends to its medicinal effects. At present I am unable to give the name of the mother-plant; to judge, however, from some pieces of genuine wood now before me, I am inclined to feel justified in placing it in the natural order of Papilionaceæ.

"'It is believed in Berlin that gratifying results have been obtained with this remedy in the first stages of phthisis pulmonalis. It is given in the form of decoction, namely, ʒvi to ℥j of the wood to 12 to 14 oz. of water, boiled down to ℥v, and this is taken 2 to 4 times daily, according to circumstances, combined with other remedies. It is requisite to continue the use of this remedy for several months, and to observe a diet in accordance with the nature of the disease.

"'Two weeks ago I wrote to Berlin for the purpose of learning the latest observations with this wood, and I am ready, with pleasure, to communicate to you the results on their arrival.

"'Yours, etc.,
"'KROG, M.D., 337 Tenth St.'"

It is proper, however, to state that Professor Bock, of Leipzig, opposes the use of anacahuite, insisting that in pulmonary consumption relief can *only* be found in the strictest regimen, by partaking of suitable food, breathing a pure and warm atmosphere, using moderate exercise, and attending scrupulously to a mental, intellectual, corporeal, and sexual rest.

2. Mr. Daniel Hanbury, after referring to the recent introduction of this new drug into the market, and to the great demand for it in Germany, describes it as follows:—

"Anacahuite wood is a production of Tampico, whence, in fact, all the supplies that have reached Europe have been shipped. Its botanical origin is at present unknown. Dr. Otto Berg, who has elaborately described its external characters and anatomical structure, (*Bonplandia*, 15th Oct., 1860, p. 302,) thinks that from the organization of the bark and wood it is probably derived from some papilionaceous tree, although there are only general appearances that guide him to such an opinion. It is to be hoped, however, that this question may be soon set at rest by good, dried specimens of the flower, fruit, and leaf of the tree being obtained from Tampico, and submitted to some competent botanical authority in Europe. Anacahuite wood, as I have seen it, consists of truncheons of about two feet long, varying from the thickness of a finger to that of a man's arm. The wood is covered with a thick, fibrous, grayish-brown bark, coarsely furrowed longitudinally with deep cracks, and so tough that it may be stripped off in pieces of considerable length. A white, pulverulent matter, resembling an efflorescence, occurs between the layers of liber, from which it escapes as dust when the bark is torn. When one examines a transverse section of a truncheon, one perceives the bark to be of considerable thickness and to consist of two more or less defined zones—the inner more compact. The wood is of a pale brown, marked with concentric zones, which, however, are too little distinguished from one another to be counted with any certainty. The pith is frequently eccentric; its transverse section sometimes shows a stellate form.

"Anacahuite wood is inodorous and insipid. A strong decoction is transparent and of a sherry-brown color; it is blackened by a persalt of iron, but neither a solution of gelatin nor of iodine affects it. The taste of the decoction is extremely slight and unremarkable, so that one may reasonably be permitted to doubt the extravagant, though, if true, very gratifying assertions regarding the virtues of the drug. The experiments, indeed, that have been instituted in the great hospital at Berlin have hitherto had, as I am informed by Dr. C. G. Mitscherlich, no satisfactory results. The details of the cases have not, however, yet been published."

II.—*Nitric Acid in Intermittent Fever.* By WILLIAM A. HAMMOND, M.D., Professor of Anatomy and Physiology in the University of Maryland.

In an article, contained in the *Maryland and Virginia Medical Journal* for February, 1861, Professor Hammond recommends the use of nitric acid in intermittent fever. He publishes a table showing the results obtained in the treatment of a number of cases of this disease, and accompanies it with the following remarks:—

"The table forms the basis of a report made about four years since to the Surgeon-General of the Army, and has never been published. The cases were treated at Fort Riley, Kansas Territory, in the post hospital, then under my charge, in a period of six weeks in summer.

"Upon referring to the table, it will be seen that in all forty-one cases were treated, ten of these being of the quotidian type, and thirty-one of the tertian. Thirty-two cases were treated with the nitric acid, and nine with the sulphate of quinine. Of the cases cured by nitric acid three had previously used quinine without effect, and of those in which quinine had proved successful nitric acid had been employed without benefit in two, and in one other had to be omitted on account of causing nausea, heart-burn, etc.

"The average period of treatment before the disease was permanently arrested was the same with each remedy—three days. The nitric acid was uniformly given in doses of ten drops (properly diluted with water) three times per day, the quinine in doses of eight grains three times per day.

"Besides the fact that the nitric acid was equally successful with quinine in arresting the disease, the difference in the cost of the two articles is so greatly in favor of the former substance as to render it an object of importance to make its curative properties more widely known.

"Nitric acid was first used as an anti-periodic by Dr. E. S. Bailey, of Indiana. Its peculiar properties were brought to the notice of the profession by Dr. George Mendenhall, in the *Western Lancet* for August, 1854. A notice of the discovery is also contained in the *American Journal of Medical Sciences* for October, 1854." * * * * * * * * * * * *

"Since the foregoing cases were treated, I have very frequently employed nitric acid in the treatment of intermittent fever, and have rarely been disappointed in my expectations of its curative action. In fact, in simple uncomplicated intermittent, I seldom have occasion to use anything else.

"In cases of enlargement of the spleen, consequent upon frequent attacks of the ague, the remedy in question has, in my hands, proved very advantageous.

"The whole subject is one of great importance to the physicians of malarious districts, and I trust will sufficiently engage their attention as to induce them to test the curative power of nitric acid in those cases of intermittent fever which may fall under their charge, and to add to the sum of our knowledge by reporting for the information of others the results at which they may arrive."—(*Maryland and Virginia Medical Journal*, February, 1861.)

III.—*Kukui, or Kekune Oil.* By M. C. COOKE.

Now that the oil of Aleurites triloba is spoken of so highly in France as a purgative oil, a few particulars concerning it may not prove uninteresting.

The plant producing the fruits from whence this oil is extracted belongs to the natural order of Euphorbiaceæ, and is plentiful in the Sandwich, Society, and other groups of islands in the Southern Seas. It is also to be met with in some parts of Jamaica and the East Indies. The oil has been for some time known in Jamaica as Spanish walnut oil, and in India as Belgaum walnut oil. In Ceylon the oil is called Kekune oil, and in the Sandwich Islands Kukui oil. The tree is known in some parts of Polynesia as the candle-nut tree. The fruits are nearly as large as a walnut, and the kernel is inclosed in a thick, hard shell. These nuts are often strung together by the natives, and burnt, without any other preparation, as torches. In the history of the mutiny of the Bounty, it is stated that the rooms in Pitcairn's Island were lighted up by torches made of "doodoe" nuts, strung upon the fibres of the palm leaf, forming a good substitute for candles. These nuts are also so strung and used by the San Blas Indians in Central America, and a child is in attendance to knock off each nut as it becomes burnt out.

The following is the method adopted in obtaining the oil in Jamaica. Each nut is carefully cracked or broken, and the kernel as carefully separated from the hard shell, lest the latter, having a brown dye quality, should affect the color of the oil. The kernel is then put into a large mortar and pounded as fine as possible. It is afterward thrown into a caldron with plenty of water, and boiled. It is allowed to simmer for hours, until all the oil is well extracted and floats on the surface. Meanwhile, and until all is gathered together, the oil is skimmed off into another clean vessel. The oil thus collected is then boiled over again in a smaller vessel for a short time, in order to throw off any aqueous particles remaining after the first skimming. If the oil is not then perfectly pellucid, it is run through blotting-paper. Eight quarts of kernels will yield about three pints of oil. The yearly produce of oil in the Sandwich Islands is about 10,000 gallons. It has been shipped to the markets of Chili, New South Wales, and London, but hitherto without much profit. It realized about £20 per imperial ton in London. In 1843 about 8620 gallons were shipped from Honolulu, valued at 1*s.* 8*d.* per gallon.

This oil has been used as an artist's oil, for which purpose it is said to possess valuable qualities, although it cannot be applied as a drying oil. It is only lately that attention has been called to its medicinal properties. It is purely purging, and, not like the croton, jatropha, caper-spurge, sandbox and other euphorbiaceous oils, productive of vomiting at the same time. It is affirmed to be as mild as castor oil, and being more fluid, is better to take; it is without either taste or smell.

The nuts have, within the past twelve months, been sold in the London market under the name of kukui nuts, and there is no doubt that, upon inquiry, some of the oil could be procured, and it evidently well merits the attention of the profession. A purgative oil which shall possess all the advantages, and none of the disadvantages of castor oil, is a desideratum worthy of being secured.—(*London Medical Review*, and *Pharm. Journ.*, November, 1860.)

IV.—*Steadine a Substitute for Hog's Lard.*

Steadine is but a contraction of the word stearaïdine, resembling fat, and is prepared as follows:—

Lard	3½ ounces.
Water	3½ "
Soda deprived of its carbonic acid by lime . .	15 grains.

The soda is weighed and used dry. It should be melted in about four drachms of water; the lard is then gradually added alternately with the remaining water. The operation of this mixture is both swift and simple; in ten minutes four pounds of steadine may be prepared. This new adipose substance presents the appearance of a whitish, fatty compound, inodorous, insipid, and intermediate between cerate and lard. Its consistency, soft at first, soon acquires more firmness; it is not, like axunge, liable to liquefy during warm and to harden in cold weather. It indefinitely preserves its color and density, unless left constantly exposed to the atmosphere—a practice injurious to other pomades and fatty matters, which turn rancid from prolonged contact with the oxygen of the air.

The slight addition of the alkaline ingredient is undiscoverable from taste or from examination with test-paper, being entirely saturated by the fatty excipient. It suffices, however, to create a new fatty substance of a mixed nature, a medium between fats and bodies soluble in water. A new and solid species of glycerin is thus produced, which is to a certain extent soluble in oils and water. This double property renders it capable of being in the preparation and use of pomades as serviceable as glycerin itself for oils and liniments. Ointments containing metallic bases, oxides, chlorides, sulphurets, iodides, salts, etc. remain unaltered; the iodide of potassium pomade preserves its whiteness, and does not lose its iodine. For the purpose of manipulation, it will be found most convenient. Insoluble powders mix with it promptly and with great accuracy. It is more readily combined with vegetable powders than lard, a bad solvent of their active principles. Soluble salts, extracts which require previous dilution in water, can be immediately and completely associated with steadine, whereas, when hog's lard is used, the repulsion between the ingredients is so great that a very protracted and persevering manipulation is necessary before even a badly-assorted union can be effected.—(*Journal of Practical Medicine and Surgery*, and *Pharmaceutical Journal*, London, December, 1860.)

V.—*Tincture of Iodine in Acute Superficial Phlebitis.*

The Russian medical journals have lately published several cases illustrative of the good results of the external employment of tincture of iodine in acute superficial phlebitis. One of the examples cited is of sufficient practical importance to merit translation: "A peasant, of robust frame, and of about thirty years of age, was attacked with pleurisy, and in consequence bled in the arm. During the evening succeeding the venesection, pain, redness, and swelling appeared, both in the neighborhood of the wound and over the surface of the limb. Five days after the bleeding, as these symptoms had progressively increased in gravity, resisting treatment, the patient was admitted into the Hospital Marie, at St. Petersburg. Dr. Spoiret, author of the collection of cases, and chief medical officer of this establishment, found the whole arm enormously swollen, the skin tense and dark red in color; in the situation of the vein implicated was seen a broad line, of a livid, violet hue, to the touch feeling hard, cord like, and pressure occasioning great pain. The swollen and discolored track could be followed to the armpit, evidencing an inflammatory condition of the brachial vein. Violent fever was likewise present, with a hard, wiry pulse, headache, thirst, and constipation. A treatment of leeching, mercurial unction, fomentations, purgation, and muriatic-acid mixture, pursued for four days, proving utterly ineffectual, the fever having increased in gravity, and symptoms of purulent infection setting in, a total change was ordered in the *régime;* and while sedatives were administered internally, applications of tincture of iodine, renewed every three hours, were freely made along the whole course of the inflamed vein. At the end of two days the inflammation had considerably abated; a kindly suppuration commenced, and the case did well." Although bleeding, like dueling and such other relics of barbarism, is daily becoming less and less common in England, the one yielding to the advance of science, and the other to the march of civilization, and although the term "leech" is becoming daily less and less true in its application to members of our profession, still cases of phlebitis from superficial injuries in unhealthy subjects are far from being rare, and the above citation, from the *Russian Medical Zeitung,* I deem quite worthy the attention of your readers.—(*Lancet,* December 22, 1860.)

VI.—*Thapsia Plaster.*

This is a new therapeutical agent, the active principle of which is derived from Thapsia garganica, an Algerian plant. It is a most energetic revulsive, the effects of which can be graduated by the duration of its application, replacing blisters in serious affections, and rubefacients in the milder ones. It induces an erythema, which is speedily followed by an abundant and salutary miliary eruption. Its action is rapid, more certain than that of croton oil, and its employment is exempt from the numerous inconveniences attributed to some other external agents. It may be employed in any cases in which revulsion is indicated, but it is especially useful in diseases of the chest, rheumatism, and arthritis; it is also serviceable in the affections of children.—(*Med. Times and Gaz.,* November 17, from *Gazette des Hôp.,* No. 60.)

MEDICAL CHEMISTRY.

I.—*On the Detection of Sugar in Urine.* By MR. ATTFIELD. (London Pharmaceutical Journal, January 1, 1861.)

On the same. By DR. BENCE JONES. (London Pharmaceutical Journal, February 1, 1861.)

New Test for Diabetes. By DR. E. C. BIDWELL. (Boston Medical and Surgical Journal, Nov. 22, 1860, and New Orleans Med. News and Hosp. Gazette, Jan., 1861.)

1. The *London Pharmaceutical Journal* for January notices a communication from Mr. Attfield, which has also appeared in the *Chemical News,* having reference to Boettger's test for sugar in urine. It will be remembered that his test consists in adding a few grains of ordinary trisnitrate of bismuth to a portion of the urine, then pouring in an equal volume of a strong solution of carbonate of soda, and heating the mixture. The presence of sugar is indicated by the formation of a deep brown or black color, due to a reduction of the oxide of

bismuth. Boettger originally devised this process to obviate some of the sources of error which frequently attend the application of Trommer's test. It is well known that the presence of certain constituents of the urine, and especially of uric acid in abnormal quantity, may cause a reduction of the oxide of copper in the application of Trommer's test, without sugar being really present. Oxide of bismuth was found to be certainly not affected by uric acid, and to that extent therefore might be considered as preferable to oxide of copper. Mr. Attfield has been engaged in some experiments on the applicability of Boettger's test. He states that it is far more delicate than Trommer's. He finds that by it abundant indications of the presence of sugar can be obtained in an aqueous solution so dilute as to give no reaction with Trommer's test. But he also finds that the presence of albumen in the urine will cause a reduction of the oxide of bismuth, and introduces therefore a source of error. He states that the action of albumen is far less energetic and complete than that of sugar, but that nevertheless blackening does occur, and to a greater extent than could be accounted for by the influence of the sulphur present in the albumen. Moreover, some of the constituents of healthy urine appear to interfere to a certain extent, for the author states that "nearly all specimens of urine color more or less the basic nitrate of bismuth." Mr. Attfield therefore objects to this test as a means of detecting sugar in urine, because of its extreme delicacy, and because other substances, and especially albumen, may produce the same reaction. For the mere detection of sugar in alkaline solutions generally, it is however exceedingly sensitive. The author concludes his communication by recommending Trommer's test, which he considers "for medical purposes fulfills all desirable conditions."

There can be no doubt, however, that Trommer's test is subject to certain objections. Mr. Attfield, in his paper, does not mention the test commonly known as Moore's, which consists in adding to the urine an equal volume of liquor potassæ, and boiling for some minutes, when, if sugar is present, a peculiar and very characteristic brown coloration is produced. This test is subject to many less objections than either of the above, and is now very commonly employed in the examination of urine, and for the detection of grape sugar generally. This test possesses, in addition to its being very trustworthy, one great advantage, namely, that it can be almost as readily used for determining the amount of sugar as for recognizing its presence. This depends upon the fact, that the depth of color produced bears a strict relation to the amount of sugar present. If, therefore, a standard solution of grape sugar is prepared, and a given quantity colored to the fullest extent by boiling with potash, upon taking an equal quantity of the urine and treating it in a similar manner, by comparing the colors, and diluting until the tint is equal, the proportion of sugar present in the urine is readily arrived at.

2. At a recent meeting of the Chemical Society, a paper was read by Dr. Bence Jones, on the presence of sugar in the urine. The author described a number of experiments which he had undertaken with a view, first, of ascertaining the most delicate process for the detection of minute traces of sugar when added to urine; and, secondly, for obtaining further proof of the correctness of Brücke's statement, that sugar is always present, and is a normal constituent of

healthy urine. His principal conclusions were as follows: Lehmann's process for detecting sugar in the urine by extracting the evaporated residue with absolute alcohol, and precipitating the sugar therefrom in the form of potash sugar, by means of alcoholic potash, cannot be employed when small quantities are present in large quantities of urine. The process of fermentation is stopped by the residue of the urine, by much urea, and still more decidedly by oxalate of urea. Half a grain of sugar in water can be detected by the alcohol produced, and may be estimated by the carbonic acid produced, but much larger quantities may be entirely overlooked in concentrated urine. In decolorizing urine for examination in the polarizing saccharometer some sugar is always lost. Animal charcoal removes sugar in proportion to the amount of charcoal used. This sugar may be recovered by washing with boiling water. Two-thirds of the sugar in urine may be lost by Robiquet's method of decolorizing with basic acetate of lead and ammonia. Pettenkofer's test for sugar, by means of cholic or glycocholic acid and sulphuric acid, is the most delicate known. Two-thirds of a milligramme may be detected in a little distilled water, and the presence of a small amount of urinary coloring matter does not affect the reaction. Trommer's test with sulphate of copper and potash is capable of discovering one-twentieth of a per cent. of sugar in urine, but when very small quantities of sugar are in solution with muriate of ammonia or urea, the reduction of the oxide is not perceived. Brücke's alcohol process was not found to be satisfactory, but his lead process furnished excellent results. The urine is precipitated first with neutral acetate of lead, then with basic acetate of lead, and lastly with ammonia. The ammoniacal precipitate contains the sugar, which is extracted by treating the precipitate with oxalic acid, or preferably by sulphuretted hydrogen. By Brücke's process one-seventh of a grain of sugar added to 200 cubic centimetres of urine could be detected, and two-thirds of all the sugar added could be recovered. Moreover, the sugar is obtained free from salts, so that it can be fermented, and free from color, so that it may be examined by the saccharometer. The presence of sugar could be readily ascertained by this process in 1000 cubic centimetres of urine. The sugar separated by Brücke's process from 1000 cubic centimetres of the urine of a healthy man was estimated by the reduction test to vary from 1·4 to 2·2 grains, and in that of another man to vary from 2·3 to 3 0 grains. The sugar separated from 5000 cubic centimetres of the urine of one healthy man gave from 7 to 8 degrees of rotation in the saccharometer, and that of another healthy man from 10 to 11 degrees. The sugar extracted from 14,000 cubic centimetres of healthy urine yielded by fermentation 1·8 grains of carbonic acid, together with a recognizable quantity of alcohol. These and other experiments fully confirmed Brücke's statement as to the habitual presence of sugar in healthy urine. Hence diabetes must be regarded as an exaggeration of a healthy state, and not as a distinct and peculiar condition of the system.

3. Dr. E. C. Bidwell communicates to the Boston *Medical and Surgical Journal* (Nov. 22, 1860,) a process which he claims as a new test for glucosuria. His proposed test, he says, if not pre-eminently scientific, is nevertheless facile and reliable. He converts the saccharine element of diabetic urine into *caramel*, by heat. Upon a clean slip of tinned iron are placed one or two drops of the suspected material, which is then held over a spirit-lamp; the fluid will

speedily evaporate, leaving scarcely a trace upon the surface of the metal. The application of the heat is continued, and in a few moments after the completion of the desiccation, a spot, about an inch in diameter, over which the drop has spread with the first ebullition, will gradually assume a rich, reddish-brown color, with a brilliant lustre, having the appearance of Japan lacquer. The application of a stronger heat produces a darker color, but the lustre continues until the intensity of the heat decomposes the substance. Dr. Bidwell claims great success in his experiments with this new method, which is far superior to those tests founded on either fermentation, or on the reduction of metallic oxides, which latter, besides being complicated and inconvenient for clinical use, are liable to various fallacies.

TOXICOLOGY AND LEGAL MEDICINE.

I.—*On the Question of Quantities in Toxicology.* By M. LOUIS ORFILA.

When by chemical analysis the expert has determined the presence of poison either in the cadaver or in the matters vomited, he is required to declare whether the quantity of poison found or the quantity swallowed is sufficient to cause death or produce the symptoms observed. In order to establish the sense in which the expert should reply to this question, we may take a rapid survey of the data upon which he should rely.

1. The whole quantity of poisonous substance which has been swallowed is not absorbed, save in exceptional cases. A portion, usually the most considerable, is rejected by vomiting, or, after traversing the digestive canal, passes off by stool. When death takes place promptly, a portion may still be found in the canal. The remainder is absorbed, that is, it is carried into all the tissues. 2. The portion absorbed is not distributed uniformly through the various parts of the organism. Daily experience shows that with the same weights the liver always yields to analysis a much larger proportion of poison than all the other organs. 3. Elimination commences a short time after absorption, and the investigations which have been made up to the present time show that as regards certain of these poisons, arsenic, for example, it may be completed fifteen or twenty days after ingestion. It is therefore evident that the amount of poison remaining in the organs, where it has been carried by absorption, continues diminishing from the period of its ingestion, so that if life be sufficiently prolonged, the entire quantity of poison absorbed may have become eliminated prior to death. Thus, a month after the ingestion of an arsenical preparation the organs will contain no trace of arsenic. Chemical search will not discover it, but yet death has been none the less the result of the disturbance which it has caused. It is obvious that the presence of poisonous substance in the organism until the last moment is not necessary for the production of death. The blow was struck at an early period, diseased action has been developed under the influence of the poison, and death is the termination of such disease. 4. When the rejected matters are not handed over to the expert, and when the alimentary canal is completely empty, chemical research can only be directed to certain organs or portions of them. It is a rule for the first experts to retain a portion of the matters handed over to them for ulterior research. It is easy to understand,

then, especially with the more or less considerable losses rendered unavoidable in so difficult an analysis, that the quantity found constitutes but a very small fraction of that which has been swallowed, or even of that which has been absorbed. 5. Finally, it is highly important to note that for no poison do we know the quantity sufficient to induce the accidents of poisoning. By observations, whose rarity retains their significance, we know, to some extent, the limit beyond which doses should, in general, be regarded as poisons; but this limit is incontestably very superior to the reality. Thus, we know that fifty centigrammes of arsenic will induce poisoning in all cases, save in very rare exceptions; but no one can decide, in a given instance, whether five, ten, twelve, or fifteen centigrammes will not suffice to cause death. The action of poisons is so variable, and we are so little acquainted with the causes which give rise to their variance, that we cannot, without risking to expose ourselves to serious error, determine what is the minimum dose of a poison sufficient in a particular case to give rise to death, or to the symptoms observed.

From the above data it results: 1. When the vomited matters and the stools have not been submitted to chemical analysis, it is impossible to ascertain even approximatively the quantity that has been swallowed; and consequently to declare whether the quantity ingested has been sufficient to cause death. The quantity absorbed, moreover, by reason of the unequal dissemination through the various organs, and the elimination which may have taken place, cannot be estimated by the amount found in certain organs or portions of organs. Such amount is but a minute fraction of the portion absorbed, which itself is but a fraction of the quantity swallowed. It may be sufficient to induce death, although the quantity ingested, or even that absorbed, may be more than sufficient. 2. If there have been neither vomiting nor stools, and if the digestive canal contain no poison, the quantity ingested has been all absorbed; and for the above reasons there is no means of judging by the quantity found of the amount which has been swallowed. 3. If the vomits and stools have been analyzed, or if (in their absence) the matters contained in the canal comprised the whole of the poison swallowed, except the portion absorbed, it is possible to declare approximatively the amount ingested. In such a case it is desired to establish whether the quantity ingested is sufficient to determine death. It is only when the quantity swallowed has been much greater than that which would be really sufficient for this purpose that the expert can reply affirmatively. Under other circumstances, by reason of our ignorance concerning the conditions which modify the action of poisons, the greatest reserve is peremptory. The reasons for doubt, dependent upon the actual state of science, should be stated; and this conclusion brought out that, in general, even when the quantity ingested has been really larger than that which is necessary to induce death, we are still not in a condition to affirm that it has induced it.

It is very desirable that this question of quantity should be reduced to exacter proportions, and that it should no longer contain the exaggerated importance which is now attributed to it. The symptoms and the lesions of tissue, combined with the detection of poison in the organs, are the most valuable elements for forming a decision whether poisoning has taken place, while the question of quantity, so far from bringing out the truth, will only conceal it in the great majority of cases. When a poison exists in organs or in matters which should not contain it, its quantity, save in some exceptional cases, cannot be insisted upon as a proof of poisoning. The great bulk of crimes of this kind would escape detection if such a proof were considered necessary. In order to exhaust this subject of quantity, and of the conclusions to be arrived at by experts respecting it, we may state two particular cases in which dosage is daily referred to. 1. Has the poison, which has been detected, resulted from the substance having been administered medicinally? An instant's reflection will suffice to explain that except in the case wherein the poison has been found in the matters of the alimentary canal, the vomit, or the stools, in quantities much larger than the highest therapeutical doses, the consideration of quantity will in nowise elucidate the problem. The portion absorbed, which, moreover, it is impossible to determine, will never be sufficiently considerable to allow of a sure deduction being made. 2. But it may be said, when we have to do with poisons which also exist in the animal economy in a normal state, is it not of service to have recourse to the consideration of quantity, in order to determine whether a poison discovered in the organs does not result rather from this normal combination than from a criminal introduction? When there exists in these organs a much larger quantity of poison than has been found in the normal condition, (and thus far experience has taught us very little on this matter,) we may be authorized to admit poisoning as probable, supposing that all other objections have been previously refuted. But when the amount discovered is not very considerable, (and, judging from the preceding considerations, this will be the usual case, inasmuch as it can be only a portion of what has been absorbed,) the embarrassment is just as great, and the question of quantity is of no significance.—(*Gazette des Hôpitaux*, No. 60, and *Druggist's Circular*, March, 1861.)

PATHOLOGICAL ANATOMY.

BY JOHN H. PACKARD, M.D., OF PHILADELPHIA.

I.—*Encephaloid Tumors on both sides of the Neck, with Obliteration of the Left Internal Jugular Vein.* By Mr. Cutler.

John T., aged thirty-six, was admitted into St. George's Hospital in October, 1860, with "a large swelling on both sides of the neck, under the jaw, which proved to be medullary cancer. He died from the effects of this on the fifth of November.

"*Autopsy, thirty-one hours after death.*—On dissection, the swelling of the neck was found to depend on a series of globular tumors, apparently generated in the cervical glands, of the soft malignant (encephaloid) variety, filling all the upper part of the neck, resting on the cervical vertebræ behind on both sides, and nearly meeting in front across the middle line. The skin was not adherent. On the right side, the carotid artery, pneumogastric nerve, and internal jugular vein passed completely through the tumor. The vessels were widely separated, but were quite pervious. The nerve did not present any obvious appearance of injury. On the other side, the vessels also passed through the tumor, and were less widely separated; but the vein was completely impervious at its upper part. The tumor presented a whitish uniform section, and contained an abundant creamy juice, in which multitudes of large nucleated cells of various forms, many of them containing oil-globules, were seen. On the left side, large masses lay over the angle of the jaw, and others were found passing behind the hamular process, and pressing on the floor of the mouth. The parts about the left tonsil seemed sloughy, though the tonsil itself was natural. The pharynx and larynx were healthy. The sterno-mastoid muscle on each side was lost in the tumor. The veins at the root of the neck were distended with blood. The right side of the heart was loaded with decolorized blood. There were old pleuritic adhesions. The heart, lungs, and abdominal viscera were healthy."—(*Lancet*, December 29, 1860.)

II.—*Rupture of the Lung without Fracture of the Ribs.* By M. MARJOLIN.

A boy, aged thirteen and a half years, was brought to the Hôpital Sainte-Eugénie, December 3d, 1860, having had his chest run over by the wheel of a dray. His dyspnœa was excessive, but there was no hæmoptysis, hæmatemesis, subcutaneous emphysema, or pain in the belly; there was a contusion on the front of the chest, but no fracture of the ribs could be detected. On auscultation, the natural sounds were heard all over the left side of the thorax, but on the right side there was amphoric breathing, with metallic tinkling; the dyspnœa prevented percussion over this side. Death occurred on the third day. "On post-mortem examination, the right lung was found to be ruptured in two places. One rupture was situated near the anterior margin of the upper lobe, and was nearly half an inch in depth, the other was at the junction of the upper with the middle lobe. The pleural cavity contained eight or nine ounces of blood, and the surfaces of the lung and of the opposed wall of the chest were covered by layers of recent lymph of considerable thickness. The right lung and pleura were perfectly normal. The third and fourth left ribs, and the third right rib were incompletely fractured. It was only the external surface which was fractured, and the corresponding pleural surface was quite intact."—(*Gazette des Hôpitaux*, Dec. 29th, 1860.)

A very similar case is recorded by Mr. Bryant, in the *Guy's Hospital Reports*, (3d series, vol. vi. p. 43.)—(*British Medical Journal*, Feb. 2, 1861.)

III.—*Patency of Foramen Ovale.* Reported by DR. BOWDITCH to the Boston Society for Medical Improvement.

This lesion occurred in the person of a lady, who until she was nineteen years of age had been unusually strong and agile. At that time she noticed some dyspnœa from dancing, while at a ball. She married a few years afterward; but never bore any children. Without any symptoms of disease about the heart, or serious lesion of the lungs, her digestive, renal, and uterine functions being likewise perfect, she suffered more and more from difficulty and oppression in breathing, and died at the age of 45.

"At the *autopsy*, the right cavities of the heart were found much hypertrophied; the left were normal, or nearly so. The foramen ovale, an inch in diameter, was round and smooth, with a thin edge. All the valves were perfectly normal. The lungs had old tuberculous disease to a small extent, in both apices. Owing to circumstances beyond control, the other organs were not specially examined, but they seemed normal."—(*Boston Medical and Surgical Journal*, Feb. 28, 1861.)

IV.—*Aneurism at the Apex of the Left Ventricle of the Heart.* Reported by MR. CANTON to the Pathological Society of London.

A gentleman, aged forty-nine, died suddenly during the night. He was of large and muscular frame, and had always enjoyed good health.

Masses of fat were found nearly concealing the pericardium from view. Intimate adhesions existed between the opposed surfaces of the membrane over nearly its whole extent. The left ventricle was thickened except toward the apex, where a dilatation large enough to contain a plover's egg had occurred. Pericardium, degenerated muscular tissue, and endocardium formed the walls of the sac; the latter of these layers was thickened and opaque, and had firmly attached to it some flakes of old and laminated fibrin. The thickening and opacity extended above the neck of the sac, which was wide.—(*Lancet*, January 12, 1861.)

V.—*Aneurism of the Aorta, causing by its Pressure such Destruction of the Spinal Vertebræ as nearly or quite to lay open the Medullary Canal.* Reported by DR. JOHN OGLE to the Pathological Society of London.

The subject of this disease was a patient under the care of Dr. Seymour, who has related the case in his work on the *Nature and Treatment of Dropsy.*

When dried and prepared, the aneurismal sac measured five and a half inches by four and a half, commencing about an inch below the left subclavian, and extending nearly to the diaphragm. The last seven dorsal and the first lumbar vertebræ had suffered from its pressure, caries of their transverse processes and pedicles, and of the adjacent parts of several ribs, having taken place. Some distortion of the column had occurred at this point. "*Three of the ribs were found completely broken up into several portions, which were lying loose in the coagula of the sac.*" In front, the sac was indented by the pressure of the œsophagus. At three points the sac communicated with that of the medullary canal, the openings having probably been plugged, when recent, with firm clots of blood. One of these openings was about an inch and a half long by half an inch broad; the two others were nearly circular, and about the size of a ten-cent piece.—(*Transactions of the London Pathological Society*, vol. xi.)

VI.—*Aneurism of the Ascending Aorta.* By DR. OGLE.

A woman, aged forty, was admitted into St. George's Hospital, having noticed, ten months before, a swelling between the third and fourth ribs, a little to the right of the sternum; the symptoms showed this to be an aneurism. Three weeks later, crowing inspiration, orthopnœa, and frothy, muco-purulent expectoration were observed; both pupils were somewhat dilated. In a few days the right pupil became very much dilated; the right arm became œdematous, the breathing very labored, and the pulse very feeble, until death took place.

A *post-mortem* examination showed that the sac "had given way, permitting its contents to come in contact with the pectoral muscles. Portions of these muscles and of the sternum were much absorbed, and *the sternal end of the third rib was lying loose in the aneurismal cavity.* The sac, which was of the size of a cocoanut, communicated by a circular, smooth-edged aperture, of the size of half a crown, with the upper part of the ascending aorta; and the aorta itself, from its commencement to where it became thoracic, was dilated to the size of a closed, moderately-sized fist, having much atheromatous substance in its walls." The other organs were healthy.—(*Ibid.*)

[In the American Journal of the Medical Sciences for July, 1858, I reported a case in which portions of the first piece of the sternum were found by me in the cavity of a very large aneurism of the aortic arch. Such occurrences are extremely rare.—P.]

VII.—*Aneurism of the Lower Part of the Thoracic Aorta, bursting into the Substance of the Right Lung.* By DR. OGLE.

This patient, a man aged fifty-four, had the usual symptoms of aneurism; he referred his illness to a strain of his back from lifting, a year before he came under notice. He was treated in St. George's Hospital for some time, and then went away; he eventually died of pneumonia, accompanied by hæmoptysis.

At the autopsy, "an aneurism, about twice the size of a cricket-ball, was found at the lower part of the thoracic aorta. This communicated with a bilocular cavity in the base of the right lung, the general substance of which was greatly disintegrated. The cavity in the lung communicated with one of the minute bronchial tubes. The coats of the aorta, generally, were the seat of calcareous and atheromatous deposit, and the arch of the aorta was dilated. The heart itself was large and fatty, its walls being thinned, and the left auriculo-ventricular orifice was dilated."

Dr. Ogle remarks upon the rarity of the termination of aneurism, and upon the evidence in favor of the possibility of the disease being due to muscular straining.—(*Ibid.*)

VIII.—*Aneurism of the Aorta.* By PETER EADE, M.D., etc., Physician to the Norfolk and Norwich Hospital.

A stout, fat man, aged fifty-two, died in the hospital, after suffering from more or less distinct symptoms of thoracic aneurism for about seven months. He observed blood in his expectoration and stools some weeks before his death, which was immediately preceded by the coughing up of a large quantity of nearly pure scarlet blood.

"*Body examined forty hours after death.*—On raising the sternum, a tumor was seen beneath its upper part, which adhered to this bone and to the left upper ribs. The left external jugular vein was involved in it, and its cavity obliterated. The trachea was seen to be pushed over to the right of the median line. From one to two pints of clear yellowish serum were found in the left pleural sac. The right lung was enormously distended; its lobules very plainly marked out on its surface, crepitant everywhere, and when cut into, quickly collapsing. The left lung was collapsed, solid, and infiltrated throughout with dirty white or grayish purulent matter, and with lymph not yet converted into pus. Blood was found in the mouth and pharynx, but not in the trachea. On opening this tube, the cartilages of the larynx were found to be rigid and ossified. The left bronchus was flattened and compressed, but not quite closed, and about half an inch above its orifice in the wall of the trachea was seen an irregularly-rounded, ulcerated opening, the size of the end of the little finger, which opening was found to communicate with the cavity of an aneurismal sac, through a mass of coagulated fibrin contained in its interior. The œsophagus in its upper part was empty. Just below its middle it was encroached upon by a bulging swelling of the size of a small orange, and just below this again was contracted to a very small size, but healthy. Coagulated blood was found in it both above and below the swelling. The heart was covered with much fat externally. Its walls were thin, and all its cavities enlarged. The muscular tissue of both right and left ventricles was found (under the microscope) to be in a state of advanced fatty degeneration; the valves were healthy. The aorta was greatly diseased; its lining membrane closely studded with atheromatous and bony scales and plates. These patches covered the greater part of its inner surface near the heart, and were very numerous and distinct even into its abdominal portion; but the large arteries of the neck, up to their junction with the aorta, were entirely free from the disease. Two aneurismal sacs were found to spring from the aortal arch. One, the smaller, about the size of a duck's egg, sprang from its upper part, between (but not involving) the great arteries. It appeared to be composed of all the arterial tunics, was half filled with fibrinous coagulum, and communicated with the artery by an aperture so large as virtually to make it a portion of this tube. The other, the larger, also a true aneurism, and also opening into the aorta by an orifice nearly as large as the entire diameter of the sac, arose from the back part of the arch, immediately behind the left subclavian artery. It formed the large bulging seen in the œsophagus, and through the layers of fibrin contained in its interior blood had escaped by the ulcerated opening into the trachea. The left pneumogastric nerve was seen crossing over the front of the aorta to enter the left lung. It was much flattened, (and must have been considerably stretched,) and one large branch, just prior to its entrance into the lung, so much so as to exhibit quite an acute edge."

This case is remarkable in several ways. In the first place, the existence of two distinct aneurismal sacs, taking different directions, pressing upon different organs, and neither of them giving rise to physical signs. Secondly, the occurrence of hemorrhage three weeks before the fatal issue of the disease. Thirdly, the destructive inflammation of the left lung, probably in consequence of the impeded functions of the corresponding pneumogastric nerve. Fourthly, the fact that this patient was decidedly benefited by a stimulating plan of treatment, while his sufferings were aggravated by depletion.—(*Lancet*, February 16, 1861.)

IX.—*Rare Case of Diseased Liver.* By S. MARTYN, M.D., etc.

J. P., aged thirty-eight, was admitted into the Bristol General Hospital, November 7th, 1859, suffering from ascitic distention of the abdomen, for which he had been tapped. His habits had been very irregular. Tapping was again performed on the seventeenth of November, and a third time on the fifth of January, 1860. On the day after the last operation he died.

"*Post-mortem examination.*—The organs were generally healthy, except the liver and peritoneum; the latter showing traces of inflammation of slight and recent character. The liver was somewhat large, its surface being marked by a few depressed lines, and covered with recent lymph. On section, its lobules appeared either healthy and their cells not overloaded with fatty granules, or else obscured by purple congestion. The gall-bladder was empty. At the centre of the liver there was the following state of things near the transverse fissure, which was occupied around its vessels, etc., by a hard fibrous mass. On section here the knife encountered scirrhous portions, evidently composed of liver tissue altered by a new and fibrous ingredient. Hence the pale-red substance was close in texture, very elastic, and hard; while vessels passing through it were obliterated in the transit, and pervious further on. In the centre of the hardest parts the knife passed through white or very faintly yellowish masses of softer matter, the sections of which, to the number of three or four, varied up to an inch and a half in diameter. These whitish masses were surrounded by delicate zones of redness, and situated in these incomplete cysts. Irregular in shape, they might be turned out of their hollows by tearing some adhesions; when it appeared that they were in the tracks of portal canals, though, having burst them up, they excavated the liver tissue itself. Through one of these white masses an occluded portal vein ran; but some large portal trunks remained patent. The interiors of the emptied hollows were mottled with yellow matter. A probe would not pass up the cystic duct from the empty gall-bladder. The material of the yellowish-white masses was quite homogeneous, very elastic, and tore like white of egg boiled very hard. A microscopic section, from wherever taken, showed the following elements: 1. A granular base not influenced by ether. 2. Refracting granules soluble in ether. 3. Wrinkled spheroidal cells, averaging $\frac{1}{3000}$ of an inch in diameter, and possessing, when acted on by acetic acid, very much the character of pus cells. 4. Small plates of cholesterine. 5. Minute granular masses of orange-colored biliary matter. 6. Masses of radiating acicular crystals. 7. Some columnar epithelium. Alcohol, in which a piece had been boiled, soon deposited cholesterine, and, when evaporated to dryness, concentric scales resembling leucine. Nitric acid applied to a slice indicated protein and bile-compounds, producing also some effervescence. The star-shaped bodies were composed of tyrosin, as far as I could determine, the quantity present sufficing for microscopic analysis only. Insoluble in ether, and almost so in alcohol, they were readily taken up by mineral acids, and destroyed by heat. On boiling pieces of the white substance in water, filtering and concentrating, there were deposited beautiful stars of crystalline needles, possessing most of the characters of tyrosin. The pale-red condensed liver tissue around the white masses proved a fine example of abnormal development of connective tissue. It was crowded with large oval nuclei; and, at the torn edge of the preparation, each was seen to belong to a fusiform fibre-cell with dividing extremities.

"The cause of death in this person was evidently an obstruction to the portal circulation, occasioned by the diseased tissue in and around the transverse fissure of the liver. The morbid appearances were due doubtless to a previous state of inflammation; for the thickened areolar tissue in the transverse fissure, the condensed tissue of the liver itself in the neighborhood, and the hard cicatrix-like metamorphosis of parts near the white masses, all point to the inflammatory condition. The white, imperfectly encysted masses must have arisen out of this process; for the cells in them could have come only from the epithelium lining the biliary ducts, and thrown off, after the manner of pus-cells, from any irritated mucous surface. The white masses are pervaded by elements of bile, which must therefore have been freely mixed with the cells in the dilating ducts while the whole was semifluid. That certain ducts should have been dilated in this way is to be attributed to their occlusion by fibrous constricting tissue. Other ducts, remaining unaffected, conveyed the bile from the rest of the liver, so that its function, *quoad* the bile, was not appreciably impaired.

"The pathological sequence would probably be as follows: 1. Irritating matter, present in the portal trunks. 2. Irritation set up in their neighborhood, ending in rapid cell-growth of the connective tissue, and its condensation. 3. Irritation of the ducts involved, and cell-growth in them, with admixture of bile (that mere occlusion of the ducts will not produce this effect is proved by cases recorded by Bright and Frerichs.) 4. Solidification of this semifluid mass, now cut off below by a fibrous structure. 5. Gradual constriction of portal canals and veins by cicatrix-like contraction, occasioning venous congestion, dropsy, deprivation of nutritive matter, and death."

Deposits of this kind have been described as cancerous or tubercular; they have been called "tubera," "retrograde cancer," "encysted knotty tumors," and obsolete abscesses. Dittrich first traced the connection between them and the syphilitic poison, which may perhaps be directed toward the liver in consequence of the habit of spirit drinking.—(*British Medical Journal*, Feb. 2, 1861.

X.—*Marked Icterus, with Fatty Degeneration of the Liver and Kidneys.* By Dr. VON PLAZER.

Marie St. ——, aged twenty-six, an unmarried servant girl, of good constitution, came under treatment in October, 1859. She had suffered for two or three months with constipation and digestive disorder, accompanied with colicky pains in the abdomen, particularly in the epigastrium: they came on in periodical accessions. Two days before she applied for medical advice she had observed that she was jaundiced, and began to be troubled with malaise, headache, heat, and vertigo, obliging her to give up work.

Her skin and conjunctivæ were moderately tinged yellow, her tongue foul, and her abdomen slightly meteoric; the spleen was swollen, the skin hot and dry, pulse and respiration a little quick, the urine scanty, brownish yellow, cloudy, and albuminous; stools, pale brown and pasty. The chief subjective symptoms present were somnolence, dullness, vertigo, sensitiveness of the liver and stomach upon pressure, nausea, thirst, and loss of appetite.

All these symptoms were aggravated on the next day, when she passed into a state of alternating coma and delirium. On the third day of the treatment she died.

Autopsy.—The skin was still tinged yellow, and the abdomen meteoric. The cerebral meninges were œdematous, the brain swollen, congested, infiltrated with serum; at its base were about two ounces of bloody serum. The lungs were somewhat œdematous; the heart was flaccid, and numerous ecchymoses existed beneath the endocardium and pericardium.

The liver was swollen and heavy, its left lobe and the left half of its right lobe colored deep yellow, the remainder of it pale brown; its substance was soft and friable, anæmic, greasy to the knife; the lobuli were indistinct. The gall-bladder was small, containing a little clear yellow bile; the ducts pervious.

The spleen was enlarged one-half, its capsule tense, its parenchyma soft and deep red. The stomach and intestines were a good deal distended with gas, the mucous membrane puffy, dotted with ecchymoses of the size of a pin's head, and covered with deep-brown thick mucus. The kidneys were large, flaccid, somewhat yellow, moderately injected; the cortical part pale yellow, here and there streaked with red, the medullary part brownish red. The urinary bladder was small, and contained three or four ounces of cloudy, icteric urine.

On microscopical examination, the liver was found in a state of extreme fatty degeneration. The kidneys were in a less advanced stage of a similar condition.

M. Von Plazer is disposed to regard this case as one of acute atrophy, the fatty change becoming rapidly developed. He quotes similar cases published by Rokitansky in the *Zeitschrift der Wiener Aerzte* for 1860, but objects to an idea suggested by this observer, that uræmic poisoning may be the proximate cause of death.—(*Gazette Hebdomadaire*, Dec. 21, 1860; from *Prager Vierteljahrschrift* for 1860, t. ii.)

XI.—*Cancer of the Gall-bladder and neighboring Tissues.* By T. W. BELCHER, M.A., etc.

Dennis Donovan, aged about fifty, had been a hard drinker in earlier life. He was for some time an inmate of the hospital of the Cork workhouse, suffering chiefly from constipation of the bowels and sickness of stomach; he was much emaciated, but his belly was tumid, and in some places nodulated. Death seems to have occurred from exhaustion; an autopsy was made twenty-four hours afterward.

"So thin were the abdominal parietes, that the first touch of the knife penetrated the colon, when a large quantity of feculent matter, of the most offensive odor, shot up with much force, and continued to exude so long as the examination lasted. On opening the thorax, a most horrible discharge of fetid gas took place, so that all concerned had to leave the room instantly.

"The lungs were dark and congested; the heart natural, and the thoracic viscera, in other respects, healthy. The liver was of the natural size, and apparently healthy. The gall-bladder was replaced by a cancerous tumor, the entire contents of the lesser omentum being one cancerous mass. The posterior surface of the mass was nodulated, and contained gall-stones in numbers. The ascending colon was large—so large as to resemble the stomach in general appearance; the junction of the ascending with the transverse portion was involved in the disease, and so strictured that the finger could be passed through it with difficulty. The right kidney was enlarged, its pelvis cancerous, and the whole involved in the diseased mass." The left kidney was normal.—(*Dublin Quarterly Journal of Medical Science*, Feb., 1861.)

XII.—*On the Development of the Uterine Glands in Sarcomata* (*Fibrous Tumors*) *of the Uterus and Ovaries.* By PROFESSOR ROKITANSKY.

These tumors are closely allied, in anatomical composition, with certain alterations occurring in the mucous membrane and submucous tissue of the womb in the course of chronic uterine catarrh. In the latter affection the mucous membrane sometimes presents a spongy areolar or granulated swelling, due to hypertrophy of the tissue lying between the uterine glands, which are themselves elongated or distended. Sometimes the tissue and the glands are equally hypertrophied; and this hypertrophy, if circumscribed, may at length give rise to a veritable. pedunculated polypus, in which the glands are at last wholly or in part obliterated. In the latter case, their remains sometimes become filled with gelatiniform mucosity or colloid matter, are dilated, and there is finally constituted a mass of small rounded or polyhedral cysts, imbedded in a stroma of connective tissue; these are the so-called *cellular* polypi, in which the superficial cysts sometimes burst, empty themselves, and are replaced by normal cysts.

In some cases, the elongation of the glands occurs not only in the direction of the uterine cavity, but also outward, from the submucous tissue to the tissue proper of the uterus, in the substance of which they form thus a species of plug of fibrous aspect.

Sometimes, again, the hypertrophy of the submucous tissue ends in the development of fibrous tumors, within which are found not only vestiges of elongated glands, but also pouches of new formation, which at last give rise to the development of small cysts.

As derivatives from this form, we find certain fibrous polypi of the uterus which contain glandular pouches; these may arise from the normal glands, but they are sometimes of new formation. They are found, indeed, in the substance of large polypi, at a great distance from the mucous surface. These pouches may at last undergo the changes before mentioned, and especially they may become cysts. It may then happen that the tissue of the fibrous mass sprouts out into the interior of the cysts in the form of papillary excrescences. Upon section, such a body would present a cracked and granular aspect. What takes place here is an exact repetition of what we may observe in the development of adenoid tumors of the breast. Hence these are in fact *adenoid tumors* of the uterus. Such tumors are met with also in the ovary, with all the characters proper to the uterine glands; which places beyond a doubt the possibility of a formation *de novo* of such glands.—(*Gazette Hebdomadaire*, from *Zeitschrift der Gesellschaft der Aerzte zu Wien*, 1860, No. 37.)

XIII.—*Singular Case of Hermaphrodism.* By HENRY J. BUCK, Esq., M.R.C.S.

The subject of this notice had for seventy-three years passed for a female, but was of powerful frame, and manifested sexual passions toward women. She once, in London, assumed men's clothes, and even engaged in boxing-matches. She was five feet ten in height, had some beard, no development of mammæ, and a gruff, bass voice. Her habits had been irregular.

"In the place of the umbilicus an ulcerated surface existed, at the lower part of which two small apertures showed the terminations of the ureters, through which the urine constantly escaped, rendering necessary the continual application of cloths to the part.

"A depression might be observed between the ossa pubis, and, on examination, it was found that there was an arrest of development of these bones, they being nearly three inches apart.

"A mass or outgrowth of skin, composed of three portions—the third being merely a small nodule—occupied the place of the penis. The testicles were found on either side of this apology for a penis, forming a projection resembling in appearance an enlarged inguinal gland. The testes were small, and apparently perfect, and were connected by the before-mentioned mass of skin; but the vasa deferentia could not be accurately traced. The bladder was absent; the anus perfect. The 'penis' was composed of nothing but cellular and connective tissue, the larger portion showing glandular structure, but in no organized form." —(*Proceedings of the Royal Medical and Chirurgical Society*, in the *Lancet*, December 8, 1860.)

XIV.—*Sero-sanguineous Cyst of the Nates.* By M. COULON.

A female child thirteen days old was brought to the Hôpital des Enfants Assistés, having a congenital tumor as large as itself upon its buttocks. The tumor was ovoid, and somewhat flattened antero-posteriorly; it was attached to the child by a thick pedicle, but the line of division was quite evident. At its upper part, in front, the anus was perceptible, opening directly forward; a fold ran backward from it so as to divide the growth into two equal portions. A less distinct depression existed posteriorly. To the touch the sacrum seemed abnormally wide, but no gap could be detected. From the lowest part of the sacrum ran several diverging fibrous cords, easily perceived through the skin; the middle one adhered to the skin, and caused a slight ridge corresponding to its course.

Each half of this bilobed ovoid tumor was nodulated; the skin over some of the nodules being normal, and that over others of a violaceous tint. Two of these latter, elliptical in shape, were situated one on either side of the median line anteriorly; the skin covering them seemed about to give way. Fluctuation was evident throughout the cyst, which did not swell when the infant cried, nor diminish under pressure; it sometimes, however, became less tense than usual. Its circumference in its long axis was over fourteen inches; in its lesser axis, nearly ten. When the child was seated upon it, her feet were over two inches above the supporting plane.

The child died on the nineteenth day. Upon puncturing the cyst, exit was given to about three pints of clear, mahogany-colored, slightly glutinous liquid. A red deposit, which fell to the bottom when this was allowed to stand, was found to consist of blood corpuscles and epithelial cells.

Dissection showed the cyst to be unconnected either with the spinal marrow or with the rectum. It was attached by a pedicle to the coccyx; its thin fibrous wall seemed formed of the distended posterior perineal fascia, and the posterior median cord before alluded to represented the tendon of the sphincter. Its lining membrane was smooth, vascular at some points, and anteriorly pouched like the interior of the wall of the heart. Projecting from its inner surface posteriorly was a small transparent cyst, as large as a nut, full of a clear, limpid serum. The walls were at some points fibrous, at others as thin as paper; microscopically, they consisted of elastic and connective tissue.

This tumor must be regarded as analogous to the spontaneous hæmatoceles which occur elsewhere; as, for instance, in the neck.—(*Gazette Hebdomadaire*, Jan. 18, 1861.)

[Two cases very similar to the one above given were reported to the Pathological Society of Philadelphia by Dr. Keller, in November, 1857. See the Society's *Proceedings*, vol. i. p. 15.—P.]

Editors' Table.

Women who have Practiced Midwifery in Modern Times.—Following the same guide* as when we spoke of women who have practiced medicine in ancient times, we shall now gossip, for awhile, on the subject of those persons of the same sex who have been practitioners of midwifery in modern times. On the first occasion we could only find, here and there, a reference to midwives, *apropos* of the child-birth of certain queens and princesses. Thus, for instance, we are told by Ammianus Marcellinus, that Eusebia, the wife of Constantius, being jealous of the fecundity of her sister-in-law, the wife of Julian the Apostate, bribed the midwife of the former personage to cause the death of her child by cutting the umbilical cord too short.

During the dark ages, the sciences were neglected and medicine little studied. The names of but few surgeons of those times have reached us, and no allusion even is made to midwives, although it is presumable that as the wants of the sex were always the same, these persons continued to be the chief practitioners in midwifery. There is, however, one name of some note in the thirteenth century, that of Trotula, who wrote a work, entitled "*De Mulieri passionibus ante, in et post Partum.*" We speak of Trotula as the writer of this book, although we are aware that claims of its authorship have been set up by some in favor of Eros, a physician and freedman of Julia, the daughter of Augustus, and by others in advocacy of a physician of the same name who also lived at Salernum, of which the midwife Trotula was a native. Delacroix, author of a biography of celebrated midwives, speaks of the above work in the following terms: "A grammatical and medical examination of this book, even its entire texture, all show the imprint of a female mind. The negligence of style, the odd formulas which it contains, the manner in which things are presented, prove, abundantly, that the author was initiated into a number of little secrets which women only communicate to each other." There is another tract by Trotula, in MS., in the Medicean Library at Florence, under the odd title: '*In utilitatem mulierum, et pro decoratione earum, scilicet de facie et vulva earum.*" The conjunction of parts here specified for decoration is certainly quite unexpected, and it shows that, whatever may have been the restraints on free speech, there certainly were none on free writing, in what have been called the dark ages, provided that polemics were not discussed.

The first of the French midwives of whom we have any precise accounts is Perrette, (*sage-femme ou ventrière jurée.*) She lived in the latter part of the fourteenth and beginning of the fifteenth century. It is not known at what time midwives were sworn into the exercise of their calling; the laws and regulations on this subject are lost, or cannot yet be found. The most marked incident in the life of Perrette was the accusation against her of witchcraft, in that she procured the dead body of a new-born child for another midwife, in order that ointment, put into the hand of this little body, might be rubbed on the skin of a leprous patient, in the expectation, and indeed assured promise, that the crusts would, in consequence, be detached from the face of this afflicted person. Perrette, after seven weeks imprisonment, was condemned, as well as her associate, Catharine, to the pillory, and to be deprived of her title of midwife, (*ventrière.*) She was subjected to the penalty incurred in the first part of the sentence, but, by a special act of royal clemency, Charles VI., then king, authorized Perrette to continue her vocation. The reasons for this act are recited on the occasion. They are, that, by her fidelity, diligence, and industry, she had acquired the love and favor of many noble women, citizens' wives, and others; and that her calling and office are very necessary to the public good, and that many women, who have great confidence in her knowledge and diligence, call daily for her services. This letter of pardon is dated May 17th, 1408. Perrette, who had been engaged in her vocation for twenty years preceding this date, died in 1411.

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* Dr. Rouyer, Etudes Medicales sur l'Ancienne Rome.

In coming down to the sixteenth century we begin to find more details respecting midwives. We learn that at this period they attended in nearly all cases of child-birth, especially those which were easy, and they only called in physicians or surgeons when they encountered any difficulty in the case. It would seem that no measures had been taken to give regular instruction to midwives, and to confer on them the right of practicing. Something we learn on this subject in directing our attention to Louise Bourgeois, one of the most celebrated women of this class. She left behind her several works on the art of midwifery, the chief one of which is entitled "Different Observations on Sterility, Abortion, (*perte de fruict,*) Fecundity, Childbirth, and Diseases of Women, and New-born Children," forming an octavo volume. This work was published in 1609. Facing its title-page was a portrait of Queen Maria de Medici, to whom it was dedicated, and one of Louise Bourgeois, beneath which were complimentary verses, written by a certain S. Hacquin. At the foot of the portrait of the midwife we read the words, *aged forty-five years*, a specimen of female frankness not often exhibited, even by a midwife, on so delicate a subject in the eyes of the sex generally. The first chapter of this work has for heading: "How I learned the Art of being a Midwife." Louise Bourgeois, born in Paris in 1563, married a surgeon of Tours, named Boursier. In a short time after their marriage they were ruined by the political troubles, by which France was so sorely disturbed; and Louise was obliged to have recourse to her needle for her support. We shall not attempt to translate, but copy in the old French, the specifications of the various fashions of work in which she had a hand, viz.: "*petit poinct, petit mestier, broderie en jarretières.*" She was induced to become a *sage-femme* at the instance of a good woman, who had attended her in her several confinements, and who assured that with her abillty to read and write she would soon reach the highest position in the art of midwifery. After some hesitation, arising chiefly from her dread at holding infants during the act of baptism, as was then the usage for midwives, Louise determined to begin her studies. The first work which she read was that of Ambrose Paré, and her first patient was the wife of their porter. She had read that a woman who had just been delivered must not be let sleep for fear that she would be overcome by debility resulting from the evacuation. Louise, for this purpose, kept talking to the newly-become mother; but on one occasion not receiving any answer, she put the child down on the floor, and hurried to her patient, whom she found in a swoon. From this state she was, however, soon recovered by vinegar and water; but in what manner used does not appear. From attending on the poor, Louise rose to being employed by those in easy circumstances, and now she determined to be regularly received (*jurée*) in the society of the *sages-femmes* of Paris. At a reception of this nature it was necessary that there should be present a physician, two surgeons, and two midwives. The latter were the *dame* Dupuis and the *dame* Peronne. These dames, on learning the profession of the husband of the candidate, refused to receive her, on the ground that, as the wife of a surgeon, she would come to an understanding with the doctors, like cut-purses at a fair, and that their vocation would be at an end. They plagued poor Louise with so many silly speeches and sallies, that a fine child of her own, whom she was suckling at the time, died of ennui. One would suppose that the mother would have been the chief sufferer from this cause. The prediction of her own *sage-femme* was at last verified, and Louise Bourgeois had the honor of being chosen to attend Queen Maria de Medici, wife of Henry IV. She left a work, entitled "*On the Birth of my Lords and Ladies, children of France, with the particulars relating to the same, of a remarkable kind.*" The recital of the first confinement of Maria de Medici is, to use the language of M. Malgaigne, one of the most curious historical pictures; on the score of attraction it may be placed alongside the narrative of the siege of Metz, by Ambrose Paré. Henry IV. has perhaps never been so well portrayed in his inner life, and, as it were, in dishabille. The queen was brought to bed six times in nine years, under the care of Louise Bourgeois, who received on the occasion of the birth of a son five hundred crowns, and on that of a daughter three hundred crowns. After the birth of her sixth child the queen asked for a pension of six hundred crowns for her sage-femme, but Henry IV. would only grant three hundred crowns for this object.

Louise Bourgeois had several children, one of whom, a daughter, became also a midwife; but notwithstanding the great pains taken by her mother to have her thoroughly educated for the exercise of her profession, she never attained distinction in it. Louise's goodness of heart was not spoiled by her peeps at high life and at the splendor of a court. Her advice to her daughter is full of pure ethics and inculcations of kindness to all those who ask for her professional services, no matter how poor they may be. After cautioning against all wrong-doing, she specifies, as more particularly to be shunned, the wickedness of giving drugs to procure abortion. It is not enough, she says, to refuse to teach how this can be brought about, or to withhold a remedy for the purpose; "but you must be on your guard, so as not to be deceived by crafty persons, who may insidiously ask you about the diseases of young females and of married women, whom they allege to be of good character." Can we find anywhere more self-denying charity in the practice of medicine than is inculcated in the following passage, addressed by Louise Bourgeois to her daughter?

"When you are called to a house, inform yourself carefully what kind of people are in it, and whether they are of good repute. Were they the poorest people in the world, attend on them with as much zeal as if you were to receive a large reward; and you will take good care, if you discover them to be victims of poverty, not to take a single farthing from them; for to a poor person a little is a great deal. Give to rather than take from them; God will pay you back with large interest. And give thanks to God that he places this in your power, and has chosen you to serve him among his people."

There were, even at this time, houses in which women were delivered, but which were more frequently receptacles for procuring abortion and for prostitution. Similar dens are, we fear, to be found in our own great cities.

The chief professional work of Louise Bourgeois, that one already cited, contains precepts relative to difficult labors, and to diseases of women and of children. One chapter, on uterine hemorrhages depending on misplaced insertion of the placenta, is worthy of notice. In it we are told that there is a state of things in which labor must be at once brought on, no matter what may be the period of pregnancy, in order to preserve her life. At the end of the work there are several interesting cases; among others, that of a vesical calculus which she succeeded in extracting. She cites also the case of a little girl who had no anus, and in whom the lower part of the rectum was wanting: this gut opened into the vagina at a certain distance from the vulva. No operation was attempted in this case. Louise Bourgeois makes it the occasion of a moral reflection, that, "if all those women who amuse themselves in debauching married men were formed in this way, the latter would soon withdraw from their *liasons*, to love their wives more than ever." Louise had reached the advanced age of seventy-two years, and without any thought of again figuring as an author, when she was persuaded by a publisher to issue a work called a "Collection of the Secrets of Louise Bourgeois." The chief revelation made by this publication was that it ought never to have appeared; and that any old woman who had reached the age of threescore and twelve could have written just as much to the purpose as the author of the Collection.

The means of instruction in midwifery were very limited in the time of Louise Bourgeois. Some women, as in a preceding age, studied with the regularly received matrons, whom they in turn succeeded. There was, besides, a school of obstetrics at the Hôtel-Dieu hospital, of Paris, which was superintended by a *sage-femme.* A list of those who have held this office from 1594 to 1775 is given by M. Rouyer, beginning with Jacqueline Fleury and ending with Madame Dugés. At a later date, theoretical courses of obstetrics, especially for sages-femmes, were established; thus, La Peyronie, first surgeon to Louis XV., created two chairs of midwifery, one of which was allotted for the instruction of midwives. In 1737, a school of midwifery was formed at the hospital of Strasburg, for the benefit of pupils of both sexes; but still, only a small number of females were enabled to profit by these and other means enlisted for the purpose. Of the latter, we may mention the diffusion of elementary knowledge in different parts of France by eminent female lecturers, duly authorized. First and most distinguished in this class was Madame de Bouisier Ducoudray, who was born at Clermont-Ferrand, in 1712. Madame Ducoudray, after many years of study, took her degrees at St. Come on the 26th of September, 1737; and by a decree of the police, on the 21st of February following, she received the title of sworn *sage-femme.*

Madame Ducoudray's first visit to the provinces to teach midwifery was at the invitation of M. de Tiers, a powerful seigneur in Auvergne, who busied himself not a little in the propagation of his vassals. Having seen the great loss of life among children and their mothers who perished in child-bed, he conceived the design of having educated midwives to prevent these disasters. With this view, he selected Madame Ducoudray, and sent for her, in order that she might instruct the more intelligent of the females on his estates. The teacher caused artificial pieces and manikins to be made for the purposes of demonstration, and she succeeded in forming tolerably skillful pupils. The noise of these proceedings reached the court, which issued a brevet authorizing the lady to teach the art of obstetrics and to indoctrinate pupils throughout the kingdom. Madame Ducoudray gave lectures in Paris and at many other towns, and prepared more than four thousand women to practice the art of midwifery. Ample room was there, indeed, for her instructions. On one occasion, in the country near Besançon, she was asked to see a poor peasant woman, exhausted by a long labor. This poor creature had been seated on a chair, with a log of wood placed under her thighs, so as to allow of any part of the protruding body of a living child to be cut off with a chopping-knife. A person crossing the floor would tread on the head and pieces of the limbs of this child, in order to extract the remainder of which, recourse was had to pot-hooks. At the moment of Madame Ducoudray's entrance the miserable patient breathed her last, exhausted by these brutal manœuvres. In other districts, the only process attempted was to put a cord round the neck of the child after the head had protruded, in order to aid the passage of the shoulders: often the head followed the cord in this traction, but without the rest of the body being expelled. In a part of Poitou visited by the lecturer, the whole science of the grannies in attendance on such occasions consisted in making the mother walk about as soon as the head had passed the *os externum,* so that the weight of the body of the child might complete the entire expulsion. We are afraid that examples of this gross ignorance of the first principles of obstetrics may still be found even at the present time in our own country.

Madame Ducoudray died in 1789. She was successful in procuring the founding of lying-in hospitals in several of the provincial towns. Her request for a similar establishment in Bordeaux was not acceded to. This good work was left to be carried out at the instance of her niece and pupil, Marguerite Guillomance, who afterward became Madame Coutanceau. The latter, in conjunction with her husband, had charge of the lying-in hospital at Bordeaux, which she was chiefly instrumental in founding. She wrote an elementary work, entitled "Summary Instructions, Theoretical and Practical, in Midwifery. For the Use of Midwives."

Madame Dugés was the last midwife-in-chief of the Hôtel-Dieu, of Paris. She was the daugher of dame Jonet, the sage-femme at the Chatelet, and the mother of Madame Lachapelle, and the grandmother of Professor Dugés. She gave striking evidences of her courage in the different epidemics with which the Hôtel-Dieu was assailed. The hospital was in those times in a sad state. Pregnant women and those in labor were received in a small and very unhealthy ward, in which they were crowded together; several women slept in the same bed, and such a crowding could not fail to give rise to destructive diseases. This deplorable state of things lasted until 1794. Not satisfied with even the amended hygienic state of the lying-in wards of the hospital, the authorities made choice of a more salubrious and better arranged establishment. Accordingly, the house known as that of Port Royal was selected, and converted into the lying-in hospital, (*Hospice de la Maternité.*) Madame Lachapelle, who had studied under the eyes of her mother, and seconded her in the discharge of her functions at the Hôtel-Dieu, was chosen to organize the new establishment. She succeeded her mother, Madame Dugés, in the chief superintendence of the hospital of the Maternité in 1797, on the death of the former. The husband of Madame Lachapelle was a surgeon attached to the hospital of St. Louis. She ultimately acquired a European reputation. In her teachings, she displayed method and precision, and had a simple and easy elocution. She omitted no means of instruction calculated to impress the minds of her hearers. In her practice she evinced great dexterity and address, and a readiness of adaptation to new and difficult circumstances of the cases of which she had the charge. Kind and gentle, she was known to all as "the good Madame Lachapelle." Her pupils were always sure of finding in her both a friend and an instructress, who was not only patient, but complaisant, while still retaining her authority and great influence. This estimable personage died at the comparatively early age of fifty years, of cancer of the stomach, the progress of which she concealed from her friends, so that she might continue the longer the discharge of her arduous duties. This skillful *sage-femme* has left behind her a very valuable and still prized work, "*The Practice of Midwifery,*" in three volumes octavo, 1821–1825, the latter part of which was brought out under the supervision of her nephew, Professor Antoine Dugés.

Madame Lachapelle had a namesake, Mademoiselle Joanne-Louise Lachapelle, who was distinguished in the art of midwifery. She was carried off by the cholera in 1832, at the age of forty-three years. The lady first named, and whose professional life we have just sketched, was succeeded in the chief direction of the Maternité by Madame Legrand, who was obliged to withdraw from her post in 1839, on account of failing health. Her successor was Madame Charrier, who continued in the direction of the Maternité during a period of nineteen years, or until February, 1858, when she was carried off by apoplexy. The present incumbent, Madame Alliot, is spoken of in terms of commendation by M. Rouyer.

Among the deserved female celebrities in French obstetrics, the name of Mme. Boivin shines with the greatest lustre. She is quite a prolific writer. We have by her a memorial on obstetrics, a memoir on hydatic moles, another on the causes of abortion, on the pelvimeter, on the absorption of the placenta, etc. Finally, she has composed, in conjunction with Professor Dugés, a "Treatise on the Diseases of the Uterus and its Appendages," 2 vols., 8vo., with a colored atlas, in folio, 1833. She translated also different works in English and Latin; among others, Dr. Rigby's "Treatise on Uterine Hemorrhages," and a memoir on artificial delivery, and another on the Cæsarean operation, by Ferrario. Mme. Boivin was not long in gaining a European reputation: she was honored with numerous titles, received the degree of doctor of medicine in the University of Marbourg, and was made a member of the Society of Emulation, and of the Society of Practical Medicine in Paris.

Ample measures have been taken in France for the instruction of females who wish to practice midwifery. In the three Faculties there is annually a course of obstetrics, to which are admitted gratuitously this class of persons. In addition there is established in the most frequented hospital of each department an annual course of theoretical and practical midwifery, intended especially for the benefit of *sages-femmes* who attend without paying any fee. At the hospital of the Maternité there is a school of obstetrics destined to make midwives for all the departments of France. The female students may live two years at the Maternité, although they who at the end of the first year are prepared to undergo their examinations are allowed to present themselves for this trial. During their stay in the hospital they are required to follow a complete course of obstetrics, given by the surgeon of the hospital, a supplementary course by a house student (*un interne*) attached to the service of the women in child-bed. Besides this, they are called on to superintend ordinary labors, and to assist at those of a more complicated nature as they occur. In each clinical study they receive the aid of a *sage-femme* in chief.

We have not room for an account of the examinations to which the female candidates for a degree in midwifery are subjected. They consist of two series, and are adequately full and varied. The fees for their reception, as it is called, amount to 120 francs, or about 24 dollars.

Among English midwives we find the name of Elizabeth Nihell mentioned. She carried on an animated controversy with Smellie, and not long afterward published a "*Treatise on the Art of Midwifery, setting forth various abuses therein, especially as to the Practice with Instruments,*" (London, 1760, 8vo.) This work was translated into French, and published under the following title, "*La Cause de l'Humanité deferée au tribunal de la Raison, ou Traité des Accouchements par les Femmes.*" A Mrs. Elizabeth Blackwell appeared as a writer in the early part of the last century. She attended Smellie's lectures, and engaged in the practice of midwifery, but was soon disgusted with it. Giving herself up to more congenial pursuits, she set about preparing a collection of notices of medicinal plants, under the title of "*Curous Herbal,*" which, with 500 illustrative engravings, from drawings made by herself, was published in three volumes, in folio, (1736;) and a few years later in 2 volumes. It was translated into Latin, and published in Nuremberg in 1750 and 1760. Mrs. Blackwell was able, by the sale of her work, to procure the liberation from prison of her husband, who was a physician, and who had become involved by debts incurred in bringing out a work on agriculture. An Irish midwife, Mary Dunally, of Dungannon, who was born at the end of the eighteenth century, is known as a performer of the Cæsarean operation. The instrument which she employed on the occasion was a razor. After the extraction of the child she sent for a surgeon to dress the wound; during the two hours which elapsed before his arrival, she held the lips of the incision in close contact so as to prevent loss of blood. The woman survived the operation.

Among the German midwives, M. Rouyer mentions Justine Siegmundin and Ann Elizabeth Wiedmannin, who were the first to write treatises on obstetrics for the use of midwives.

Two women have acquired some celebrity for their skill in modeling in wax different parts of the human body. The first was Mademoiselle Bicheron, born in Paris about 1730. She showed an early passion for the study of anatomy, which, notwithstanding the restricted means of her parents, she gratified by purchasing books on the subject, and paying resurrectionists for bringing portions of dead bodies, which she dissected in her own chamber. Thus prepared by requisite anatomical knowledge, Mmdlle. Bicheron set about preparing models in wax, an occupation which she continued for thirty years. She visited London, where she was well received by John Hunter, and his pupil, Hewson. Her cabinet of anatomical preparations in wax was ultimately purchased by the Russian ambassador for the emperss Catherine II.

Still more famed was Anna Morandi, of Bologna, born in 1716, and who married, in 1768, John Manzolini, a somewhat celebrated anatomist of that period. Under her husband's tuition Anna learned drawing and anatomy; and, after having made the female genital organs her special study, she modeled in wax the uterus in a state of gestation, together with all the different positions which the fœtus could assume. A few years after the death of her husband, in 1785, saw this lady a member of several learned societies, including the Academy of Sciences of Bologna, and a professor of anatomy. Her lectures had a certain amount of vogue.

In drawing to a close our retrospect of women who have practiced medicine, and especially midwifery from the earliest times down to the present day, we have been influenced by what may seem to be due to the literature of the subject, but without, in any way, enlisting ourselves in advocacy of female efforts in this direction. Our own opinions, expressed in a previous number of this Journal, remain unchanged.

American women who have engaged in the practice of midwifery and general medicine will constitute the subject of a separate notice.

RESIGNATION OF PROFESSOR MEIGS.—The announcement of the retirement of this distinguished *savant* from the chair of obstetric medicine, which he had so ably filled for twenty years, in the Jefferson Medical College of this city, will be received with unfeigned regret by the many alumni and friends of that institution. His resignation was formally sent to the Board of Trustees in the latter part of February. He has thrown off the insignia of office at the close of a long, useful, and brilliant career, after having borne the heat and burden of the day for upward of half a century. Afraid lest advancing age should impair his capacity as a teacher, he was determined to quit the College in the fullness and vigor of his intellectual powers, ere the hand of decay had made the slightest impression upon him; his last course of lectures being marked by the same ability as the very best of the preceding. The valedictory which he delivered on his retirement from his chair will long be remembered by those who for the last time listened to his words as they gushed forth, warm and pathetic, from his lips, and sank deeply into the hearts of his fond and admiring pupils. He carries with him into private life the best wishes of his colleagues.

We understand that it is Dr. Meigs's intention to spend hereafter most of his time at his country residence, bearing the romantic Indian name of Hamanassett, about twenty miles southwest of Philadelphia, in the pursuits of literature and agriculture, and upon the composition of a work which he has long meditated upon the history of medicine; a task for which his extensive reading and acquaintance with ancient medical lore so well qualify him. We can conceive of no more delightful, dignified, or befitting occupation than this for one whose mind is so delicately organized as that of Dr. Meigs; and we trust that a kind Providence may render the evening of his life as happy and contented as its morning and meridian were honorable and prosperous.

The following minute was directed by the Faculty to be entered on their record on receiving the official announcement of the resignation of Dr. Meigs:—

The Faculty of the Jefferson Medical College of Philadelphia receive with deep sorrow the intelligence of the contemplated resignation of their distinguished colleague and friend, Professor Meigs.

For a long time he had expressed a desire to withdraw from the incessant labors of the most arduous branch of an arduous profession. Still, the Faculty had indulged the hope that it might be practicable for him to persist in his successful career of instructing others, which had ever been a labor of love with him, and to be content with abandoning, gradually or wholly, the practice of his profession.

He has decided otherwise, however, and sighs for retirement, away from the busy scenes to which he has been accustomed in civic life; and all must admit, that if any one can be entitled to a dignified leisure it is he.

The Faculty will part with him with intense and enduring regret. Never could any one have more closely applied himself to the execution of the responsible duties that have devolved upon him; and when sickness and sorrow have afflicted him, he was never absent from the amphitheatre at his accustomed hour, without feeling keenly the privation.

That he may reap every anticipated advantage from the course he has laid down for himself for the future, and may long be preserved to the cherished circle, to which his continued existence is so important, and to the world of science, is the fervent wish of his colleagues.

On commencement-day, March 9th, the graduating class presented to Dr. Meigs, through their chairman, Mr. Picot, an elegant portrait of himself, painted by Mr. Waugh, a distinguished Philadelphia artist. The ceremony was accompanied by an appropriate address by Mr. Picot, responded to in feeling terms by the retiring professor.

Dr. Keating.—At a meeting of the Trustees of the Jefferson Medical College, on the 8th of April, Dr. William V. Keating, of this city, was unanimously elected to the chair vacated by the resignation of Dr. Meigs. Dr. Keating brings with him to his new position an enlarged experience as an obstetric practitioner, and great readiness as a lucid and pleasant teacher; having been connected for a number of years with the Philadelphia Medical Association as lecturer on midwifery and the diseases of women and children. There were not less than eleven candidates before the Board of Trustees for this chair.

Medical Students and Graduates in the United States during the Session of 1860-61.—From the following list of the number of students in attendance at the different medical institutions of this country, it will be perceived that the classes of the last session were, in the aggregate, not so large as those of the previous one. Although all our schools are not represented, simply from our not having received catalogues, the list is, so far as we can learn, correct.

	Students.	*Graduates.*
Jefferson Medical College	443	187
University of Pennsylvania	465	175
Pennsylvania Medical College		38
University of New York	420	129
College of Physicians and Surgeons	264	62
New York Medical College		17
University of Maryland	150	63
Medical College of South Carolina	222	93
Massachusetts Medical College	205	39
New Orleans School of Medicine	236	76
University of Louisiana	401	132
St. Louis Medical College	140	52
Medical College of Ohio		24
Cincinnati College of Medicine and Surgery	127	36
Starling Medical College		16
University of Nashville		141
Memphis Medical College		21
Long Island College Hospital	58	21
National Medical College	83	
Medical College of Virginia		59
Savannah Medical College		14
Alabama Medical College		31
Lind University	51	12
Rush Medical College		37
University of Michigan	242	21

Medical Schools of Canada.—The number of students in attendance at the medical schools of Canada for 1860-61 are as follows:—

University of McGill College, Montreal	124
Toronto School of Medicine	81
Montreal School of Medicine	43
University of Laval, Quebec	32

Medical Schools and Students Abroad.—During the past winter, the number of students in Paris was 1156; in London, 1237; and in Dublin, 806; showing a large increase over the session of 1859-60. In Dublin, the number attending the different schools was as follows:—Ledwich School, 228; College of Surgeons' School, 220; Cecilia Street School, 101; Trinity College School, 100; Richmond Hospital School, 97; Steevens' Hospital School, 60.

Dental Colleges.—The number of students in attendance at the Pennsylvania College of Dental Surgery during the session of 1860-61 was 63, 36 of whom were graduated. The class of the Baltimore College of Dental Surgery numbered 58, and the degree of "Doctor of Dental Surgery" was conferred upon 29 candidates. Five students were also graduated at the Ohio College of Dental Surgery. We learn that a dental college is about to be established at New Orleans.

Bellevue Hospital College.—This is the title of a new medical school recently chartered by the New York Legislature, in connection with the Bellevue Hospital, on the grounds of which the college buildings will be erected. The names of the gentlemen composing the faculty have not as yet been announced; but we believe that it is their intention to prolong the course, and to make clinical teaching at the bedside the important feature in their plan of study.

PHILADELPHIA COLLEGE OF PHARMACY.—This old institution continues to be in a highly prosperous condition, the class of the last session being 121. Of these, 41 received the degree of "Graduate in Pharmacy." There were 5 graduates at the Maryland College of Pharmacy.

EPISCOPAL HOSPITAL.—Few of the charitable institutions of this city can show a more satisfactory career of usefulness than the Hospital of the Protestant Episcopal Church. We learn from the last annual report that the corner-stone of the new building was laid a year ago, and that the work has been pushed rapidly forward. One wing will probably be ready for patients by the close of the present year, and we congratulate the medical staff upon the prospect of being removed from their present limited accommodations, where, for the past nine years, they have labored for the relief of the sick under so many disadvantages.

The outline of the new building was suggested by the celebrated Hôpital Lariboisiere, in which the conveniences and advantages of parallel pavilions are clearly demonstrated. There will be three pavilions, known as the centre building and wings, connected by covered corridors. On the south side of the corridors will be broad verandas. The entire frontage will be 258 feet; the depth of the centre building, including the chapel, 256 feet; the depth of each wing, 200 feet. There will be 63 feet of space between each wing and the chapel.

The rear portions of the wings will be two stories high, and, with the attics, are for wards. The principal wards will be 110 feet long and 30 feet wide, and contain 30 beds each. The attics will contain 15 beds each.

The front portions of the wings will be three stories high, and are principally intended for the domestic purposes of the establishment. There will, however, be on the first and second floors two small wards, and in the basement seven separate rooms for cases of mania a potu, and other exceptional cases. The front of the centre building will be occupied by offices, library, and rooms for twenty-five patients. Thus the whole building will accommodate over two hundred beds. The centre building will contain the operating room, having ample accommodations for students. In the rear of the centre is the chapel. The whole will be heated by steam from an adjoining building, well lighted, abundantly supplied with water, and freely ventilated.

The walls are of brown stone, except the chapel, which is gray, yet harmonizing very well with the other; and the building is of a modified Norman style, and almost fire-proof.

During the past year there were admitted and treated 372 patients; making, with 31 remaining from the previous year, 403 cases.

Of these, 252 recovered, 86 were relieved, 30 died, and 35 remain; 44 were pay, 294 charity; 65 were recent accidents, which are always received in the free beds, yet not considered charity cases; 291 males, 112 females; 202 Protestants, and 201 Romanists.

During the year, 5139 out cases were treated. Since the house has been opened, 2481 cases have been admitted, of which 2121 have been free, and 19,214 out cases have been treated in the same time.

These statistics clearly prove that, while the hospital may be denominational in its title, nothing could be more catholic than the dispensation of its charity.

All suitable applicants, without regard to creed, color, or country, are received, the number being limited only by the capacity of the house. Of incurable cases, of course, preference is given to members of the denomination supporting the establishment. Clergymen of all sects visit the wards at all times, and administer religious consolation according to the peculiar views of the patients.

It reflects great credit upon Dr. Wilson Jewell, the eminent sanitarian, who was the first to urge upon our citizens the necessity of hospital facilities in that locality, though not in connection with the body that has so energetically carried it into operation.

The medical staff consists of Drs. Wm. Mayburry, H. Hartshorne, J. C. Morris, and J. Da Costa; the surgical, of H. E. Drayton, Wm. Hunt, R. S. Thomas, and R. S. Kenderdine.

THE YEAR-BOOK OF AMERICAN CONTRIBUTIONS TO MEDICAL SCIENCE AND LITERATURE.—At the request of Dr. O. C. Gibbs, of Frewsburg, Chautauque County, N. York, we announce that his proposed publication has been delayed on account of the unsettled state of the country, and that so soon as one thousand names have been received the work will be put to press. The subscription price being but three dollars, and the enterprise a worthy one, we trust that the profession will give Dr. Gibbs all necessary encouragement.

AMERICAN MEDICAL ASSOCIATION.—Just as we were going to press we received a letter from Dr. N. S. Davis, Chairman of the Committee of Arrangements, stating that, in consequence of the distracted condition of the country, the meeting of the American Medical Association would be postponed until June, 1862.

PROFESSOR GUNNING S. BEDFORD.—We are happy to see that the honor of a French translation has been extended to Professor Bedford's "Clinical Lectures on the Diseases of Females." Such a compliment must be highly gratifying to the distinguished author.

THE STATE MEDICAL SOCIETY OF PENNSYLVANIA will hold its annual meeting this year in Pittsburg, on the second Wednesday in June. The railroad companies throughout the State will furnish *return tickets*, without charge, to delegates who attend the meeting.

DR. WILLIAM JENNER, Physician to University College Hospital, and the author of several works on fever, has been appointed Physician Extraordinary to the Queen, in place of Dr. William Baly, who recently met with so sad an end.

ARMY MEDICAL BOARD OF EXAMINERS.—Surgeons C. A. Finley, C. McDougall, and W. J. Sloan will meet in New York City on the first of May, or as soon thereafter as practicable, for the purpose of examining assistant surgeons for promotion, and such candidates for admission into the army medical staff as may have obtained permission from the Secretary of War.

M. CLAUDE BERNARD has recently been elected a member of the Academy of Medicine of Paris, by seventy-two out of seventy-nine votes, in the section of anatomy and physiology. The other candidates were MM. Béclard, Sappey, Verneuil, and Bérand.

WHAT THEY ARE DOING IN SCOTLAND.—According to a return of the Registrar-General, during the year 1860, 105,704 births were registered in Scotland; 9651 of the births were illegitimate, giving the proportion of 9·1 per cent. of the births as illegitimate, or 1 illegitimate in every 10·7 births.

A NEW ANÆSTHETIC.—Dr. John Wilmhurst, of the ship Marathon, Cunard line, in a letter to the *Lancet*, states that he believes he has discovered a new anæsthetic agent and valuable anodyne in the rectified oil of turpentine. While on board the emigrant ship Indiana, he was applied to for severe supra-orbital neuralgia, and his stock of chloroform being exhausted, he sprinkled a few drops of the turpentine on a handkerchief, and applied it to the nostrils of the sufferer. After a few inhalations it produced a gentle sleep, from which the patient awoke, free from pain, and without headache or any unpleasant symptoms. He has also employed it in two cases of slight, but painful operations, as well as in cramps, renal calculus, and convulsions. "Its effect seems to be to allay nervous irritation, spasm, and pain, without deranging the action of the heart, and to produce a calm anæsthetic sleep."

PRIZE PROPOSED BY THE IMPERIAL MEDICAL SOCIETY OF CONSTANTINOPLE.—This flourishing body, under whose auspices is published the *Gazette Médicale D'Orient*, offers a prize of 5000 piastres for the best essay on the medical topography of any locality or district in the Ottoman Empire. It must indicate the physico-geographical, geological, meteorological, and hygienic condition of the locality, and the causes of its insalubrity; refer to its botany and mineral waters; make a methodical examination of the popular remedies of the country; specify the various maladies, particularly epidemics; and, finally, propose the most suitable measures for curing those maladies, and for diminishing the causes of insalubrity.

JACKSONIAN PRIZE OF THE ROYAL COLLEGE OF SURGEONS.—The subjects of the Jacksonian prize for 1861 are, "The Structure and Diseases of the Lachrymal Passages at the inner side of the Orbit, being those between the Conjunctiva and Nasal Cavity, illustrated by Drawings and Preparations," and "The best Method of effecting the Radical Cure of Inguinal Hernia; explaining the Principle of the Operation adopted, and illustrating the Subject by Cases and Drawings."

THE LATEST HUMBUG.—In the kingdom of Hanover, at the foot of Mount Iberg, is a small town, Grund am Hartz, situated near large pine forests, which is becoming celebrated throughout Germany on account of the *pine-leaf cure*, instituted there in 1855. It is alleged that cases of gout, rheumatism, scrofula, neuralgia, asthma, hysteria, phthisis, and inflammation of the mucous membranes have either been cured or greatly relieved by this mode of treatment. The extent to which it is carried may be seen from the following extract from the *Medical Times and Gazette:* "In cases of muscular rheumatism, pine-leaf vapor-baths are given, and pine-wood cataplasms applied to the suffering parts, which are also rubbed with the essential oil of the pine; besides which, two to four ounces of pine-juice are prescribed once or twice a day; for which, when the bowels are constipated, pine saline water is substituted." In fact, the leaves of the pine, either as a bath, inhalation, or solution, combined with other remedial agents, are used in every case which may present itself at the "kuranstalt." "*Vive la bagatelle!*"

NECROLOGICAL NOTICES.

DR. THOMAS HARRIS expired in this city on the 4th of March, at the age of seventy-eight; having been, at the time of his death, the oldest surgeon in the American navy. For several years he had been at the head of the Medical Bureau at Washington. He was a graduate of the University of Pennsylvania in the days of Rush, Dorsey, Wistar, Barton, and Physick. His private practice in this city was for a long time very large, respectable, and lucrative. He was associated for a number of years with Chapman's Philadelphia Institute as lecturer on surgery, was a good operator, and contributed some valuable papers to the medical periodical press, and to Dr. Hays's American Cyclopædia of Practical Medicine and Surgery. Urbane and affectionate in his manners, he was universally popular, and greatly esteemed by his professional brethren. He was twice married. His eldest son is a surgeon in the navy. The immediate cause of his death was apoplexy, of which he had had one or two attacks several years previously.

DR. WILLIAM HARRIS, a brother of Dr. Thomas Harris, and long known in this city as an excellent practitioner, died at his residence on Spruce Street, on the 3d of March, also of apoplexy, in the sixty-eighth year of his age. He had been out visiting a patient two days before, when he was suddenly seized with paralysis and unconsciousness, which continued up to the moment of his dissolution. Dr. Harris was for a time a private teacher of obstetrics in this city. He contributed several valuable papers to the periodical press, and was the author of a translation of Aran's work on the Diseases of the Heart.

DR. FREDERICK TIEDEMANN, formerly Professor of Anatomy and Physiology in the University of Heidelberg, died on the 22d of January, at Munich, in the eightieth year of his age. He was one of the most distinguished medical men of his day in Germany. He was born in August, 1781, at Kassel, took his medical degree at Marburg, in 1804, and in 1805 was appointed Professor of Anatomy and Zoology in the University of Landshut. In 1816 he was called to Heidelberg as Professor of Zoology, Anatomy, and Physiology, and it was here that he earned his world-wide reputation as a teacher and an author. In 1818 he was honored with an invitation to the University of Bonn, then recently founded; and in 1833 a similar distinction was conferred upon him by the University of Berlin, on the death of Rudolphi. The place thus declined was subsequently bestowed upon Johannes Müller, the great physiologist. In 1849 Tiedemann was overwhelmed with grief by the death of a son, who, in consequence of having taken a part in the revolution of that period, was shot by order of the Grand-ducal Government, which the father had so faithfully served for the third of a century. Soon after this sad event he retired to Frankfort-on-the-Main, where he remained until 1856, having two years previously celebrated his doctor's jubilee, a great festival, given him by the physicians of that and the neighboring cities. The University of Marburg also, in compliance with a time-honored German custom, renewed his medical diploma. He now went with his son-in-law, Professor Bischoff, to Munich, where, as already stated, he closed his long and useful career, early in the present year, the immediate cause of his death being pneumonia. Tiedemann was a prolific author. Quite a number of his writings have been translated into foreign languages. His latest publication was a small treatise on the use and abuse of tobacco. His great work on the anatomy of the arteries, issued in 1822, is in every public medical library. Its illustrations are unrivaled. He was a man of the purest character, of vast industry and perseverance, a great anatomist and physiologist, and an eminently successful teacher. We subjoin, from Dr. Engelmann's Bibliotheca Medico-Chirurgica et Anatomico-Physiologica, issued in 1848, and a copy of which is in our library, a list of Professor Tiedemann's works, in order to afford our readers a better idea of forming a correct estimate of his immense labors.

Anatomie der kopflosen Missgeburten. Mit 4 Kpftaf. Fol. *Landshut* 1813.

Anatomie u. Bildungsgeschichte des Gehirns im Fötus des Menschen, nebst ein. vergleichenden Darstel. des Hirnbaues in den Thieren. Mit 7 Kpftaf. gez. v. Dr. *Mänz* gr. 4. *Nürnburg* 1816.
Physiologie des Menschen. 1. u. 3. Bd gr. 8. *Darmstadt* 1830, 36.

1. Bd. Allgem. Betrachtgn. der organ. Körper. 1830.

3. Bd. Untersuchungen üb. das Nahrungs-Bedürfniss, den Nahrungs-Trieb u. die Nahrungs-Mittel des Menschen. 1836.

Der 2. Bd. ist noch nicht erschienen.

Abbildungen üb. den Verlauf der Pulsadern des menschl. Körpers, sammt erklär. Texte (in 4.) in lat. u. deutscher Sprache.—A. u. d. Tit.: Explicationes tabular. arteriarum corporis humani. Nach d. Natur in Lebensgrösse, gez. v. *Roux* u. lithogr. 4 Lieff. Mit 78 (wovon 38 illum.) Taf. in Imp.-Fol. *Carlsruhe* 1822—24.

Neue (Tit.-) Ausg. in 12 Lieff. 1842.

Explicationes supplementorum ad tabulas arteriarum corporis humani.—A. u. d. Tit.: Erklärungen der Ergänzungen zu den Abbildungen der Pulsadern des menschl. Körpers. (15 lith. Taf,: XXXIX—LIII. in gr. fol. u. 17¼ Bog. deutsch. u. lat. Text in 4.) *Heidelberg* 1846.

Beobachtungen üb. die hohe Theilung der Armschlagader in die Speichen u. Ellenbogen-Schlagader. gr. 4. *München* 1820.

Tabulæ nervorum uteri. Cum IV tabb. aen. Fol. maj. *Heidelberg*. 1823.

Das Hirn des Negers mit dem des Europäers u. Orang-Outangs verglichen. Mit 6 (lith.) Taf. Imp.-4. *Heidelberg* 1837.

Von den Duverneyschen, Bartholinschen od. Cowperschen Drüsen des Weibes u. der schiefen Gestaltung u. Lage der Gebärmutter. Mit 4 (5) Taf. Abbildgn. gr. 4. *Heidelberg* 1840.

Von der Verengung u. Schliessung der Pulsadern in Krankheiten. Mit 3 (lith.) Taf. (in gr. Fol.) Imp.-4. *Ebend.* 1843.

Von Lebenden Würmern u. Insekten in den Geruchs Organen des Menschen, den Zufällen, welche sie verursachen, u. den Mitteln sie auszutreiben. (Vorgetragen am 24. Mai 1844 in der Gesellschaft f. Natur u. Heilkunde zu Heidelberg.) gr. 8. *Mannheim* 1844.

u. L. Gmelin, Versuche üb. die Wege, auf welchen Substanzen aus dem Magen u. Darmkanal ins Blut gelangen, üb. die Verrichtungen der Milz u. die geheimen Harnwege. gr. 8. *Heidelberg* 1820.

u. L. Gmelin, Die Verdauung, nach Versuchen. 2 Bde. 2. wohlf. (Tit.-) Ausg. gr. 4. *Heidelberg* (1826, 27.) 1831.

s. auch: Bericht der Naturforscher in Heidelberg.—Zeitschrift f. Physiologie.

GERMANY lately lost another of its distinguished men in the death of Dr. TEXTOR, formerly Professor of Surgery in the University of Würzburg. At the time of his death he was seventy-eight years of age. He was the author of an excellent work on surgery, and enjoyed an extensive reputation as an operator; being particularly known by his resections of the joints.

WE regret to announce the death of Dr. E. J. FOUNTAIN, which took place at Davenport, Iowa, on the 29th of March, in the thirty-third year of his age. Dr. Fountain's contributions to medical periodical literature were numerous and valuable; but he is best known by his researches of the medical uses of the chlorate of potassa, on which he wrote several highly interesting papers.

DR. ARAN died late in February, from cerebral rheumatism, at the early age of forty-four. Dr. Aran was one of the most promising physicians of Paris, and a gentleman of undoubted merit and ability. He was deputy professor at the Faculty, and physician to the St. Antoine Hospital. He was the translator of Dr. Bennett's work on the diseases of the uterus, and had issued lectures on the same topic. Besides monographs on paralysis and diseases of the heart, he recently published his "Clinical Lectures on the Diseases of Women," which gained him an enviable reputation both at home and abroad.

DR. FRANCIS ADAMS, probably the most learned scholar in the medical profession of Great Britain, died at Banchory-Ternan, Scotland, of bronchitis, on the 26th of Feb., in his 67th year. A country surgeon, in a small village, constantly engaged in his calling, it is a matter of surprise how Dr. Adams found time to pursue his literary studies. He was best known by his masterly translation of Paulus Ægineta, which was published by the Sydenham Society, and by his translation of the genuine works of Hippocrates, which he finished in about four months. He was also the editor of Aretæus, and coeditor of "Theophilus de Fabricâ Corporis." He was peculiarly fitted for this kind of work, being an excellent Greek and Latin scholar. He also translated Hero and Leander from the Greek of Musæus; issued a work on the connection between the Greek and Latin languages; published a collection of original Latin poems, under the title of "Arundines Devæ;" wrote almost the whole of Dunbar's Greek and English Dictionary; composed various papers on "Greek Prosody;" and contributed "Notices of the Greek, Latin, and Arabic Medical Authors" for Barker's edition of Lempriere's Dictionary. Besides these, he made frequent communications on medical subjects to the British journals; his last paper being on the "Roman Bath," published in February in the *Medical Times and Gazette.*

DR. WILLIAM BALY, physician extraordinary to the queen, was suddenly killed by a railway accident on the 28th of January. He was fast rising in professional reputation, and was assistant physician and lecturer at St. Bartholomew's Hospital. A number of years ago he translated in an able manner Müller's "Elements of Physiology." He also contributed a number of valuable papers to the periodical press.

Bi-Monthly Bibliographical Record.

AMERICAN.

A Treatise on Human Physiology. By John C. Dalton, Jr., M.D., etc. Second edition. 8vo., pp. 690. Philadelphia: Blanchard & Lea, 1861. (From the publishers.)

Electro-Physiology and Electro-Therapeutics, showing the Best Methods for the Medical Uses of Electricity. By Alfred C. Garratt, M.D. Second edition. 8vo., pp. 716. Boston: Ticknor & Fields, 1861. (From the author.)

A Warning to Fathers, Teachers, and Young Men, in relation to a Fruitful Cause of Insanity and other Serious Disorders of Youth. By W. S. Chipley, M.D., etc. 12mo., pp. 188. Lexington, 1861. (From the author.)

Proceedings of the Academy of Natural Sciences of Philadelphia. 8vo., pp. 63. 1861. (From the Secretary.)

Annual Report of the Registrar of Births, Marriages, and Deaths, of the State of Kentucky, for the Year ending December 31, 1859. 8vo., pp. 152. Frankfort, 1861. (From Dr. Bemiss.)

Report on Morbus Coxarius, or Hip Disease. By Lewis A. Sayre, M.D. Reprint. 8vo., pp. 94. Philadelphia, 1860. (From the author.)

Annual Report of the Board of Trustees and Officers of Longview Asylum, to the Governor of the State of Ohio, for the Year 1860. Pamphlet. pp. 34. Columbus, 1861. (From Dr. Langdon.)

A Summary of the Anatomy and Physiology of the Placenta. By John O'Reilly, M.D., etc. Reprint. pp. 45. New York, 1861. (From the author.)

FOREIGN.

A Book about Doctors. By J. Cordy Jeaffreson. 12mo., pp. 409. New York, 1861.

Traité Pratique de l'Art des Accouchements. Par le Dr. Chailly-Honoré. Fourth edition. 8vo. Paris: Baillière, 1861.

A Treatise on Fever; or, Selections from a Course of Lectures on Fevers. By Robert D. Lyons, M.D., etc. 8vo., pp. 362. Philadelphia: Blanchard & Lea, 1861. (From the publishers.)

Foundation for a New Theory and Practice of Medicine. By Thomas Inman, M.D. Second edition. 8vo., pp. 528. London: Churchill, 1861.

A Treatise on Diseases of the Joints. By Richard Barwell, F.R.C.S. 8vo., pp. 469. London: Churchill, 1861.

Transactions of the Epidemiological Society of London. Part I. vol. I. 8vo., pp. 128. London: Richards, 1861. (From the Society.)

Description of Cases Communicated to the Pathological Society of London, during the Session 1859–60. By John Ogle, M.D. 8vo., pp. 49. (From the author.)

Anatomy, Descriptive and Surgical. By Henry Gray, F.R.S. Royal 8vo., second edition. London: Parker & Son, 1861.

Du Diagnostic des Maladies des Yeux à l'aide de l'Ophthalmoscope, et de leur Traitement. Par le Dr. J. D. Guérineau. 8vo. Paris: P. Asselin, 1861.

The Eastern, or Turkish Bath: Its History, Revival in Britain, and Application to the Purposes of Health. By Erasmus Wilson, F.R.S. Fcap 8vo. London: Churchill, 1861.

The Medical Critic and Psychological Journal. Edited by Forbes Winslow, M.D. No. 1. London: Davies, 1861. (From the editor.)

A Practical Treatise on Diseases of the Eye. By William Mackenzie, M.D. Fourth edition, revised and much enlarged. 8vo. London, 1861.

THE

NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

JULY, 1861.

Analytical and Critical Reviews.

ART. I.—*A Book about Doctors.* By J. CORDY JEAFFRESON, author of "Novels and Novelists," "Crewe Rise," etc. etc. Reprinted from the English Edition. New York: Rudd & Carleton. London: Hurst & Blackett, 1861. 12mo., pp. 490.

THE "Book" by Mr. Jeaffreson is written in a light, sketchy, and superficial vein, without regard to method—although it is divided into chapters—and without any attempt to delineate the inner or esthetic life of the profession, in the which, as not being himself a member of it, he could not be supposed to enter. The author, in collecting "the best of those medical Ana that have been preserved by tradition or literature, has not only done his best to combine or to classify old stories, but, also, cautiously to select his materials, so that his work, while affording amusement in the leisure hours of doctors learned in their craft, might contain no line that should render it unfit for the drawing-room table." In carrying out this intention, many *bon mots*, jokes and ridiculous incidents, the coarseness of which would not be redeemed by their wit, must of necessity have been omitted. Although many of the anecdotes now recorded have long formed part of the gossip of our medical literature, there is not a little in these pages that is new and curious. The author takes pain to acknowledge the friendly aid which he received, in the progress of his work, from Dr. Munk, the learned librarian of the College of Physicians, (London,) and from Dr. Diamond, of Twickenham House.

Interspersed between chapters on great names in the medical profession are others on "Sticks," and "Wigs," and "Quacks," and "Fees;" "The Generosity and Parsimony of Physicians," "The Quarrels of Physicians," and "The Loves of Physicians." The collection is large and various, but it is made up of such incongruous materials that the reader will find it difficult to acquire any very definite opinions of the real character and merits of the medical profession. But this is not what the author aimed at. He looked to writing a readable, and, on the whole, an amusing book, and he has succeeded. If his publishers are in good humor, and the crowd of readers pleased, what need he care about neglect of the canons of taste, or the censures of the logical critic?

Touching "sticks," attention should be drawn, the author tells us, to the *rabdos*, so respected in every chapter of the world's history—

> "To the fasces of the Roman lictors, which every schoolboy honors (often unconsciously) with an allusion, when he says he will *lick*, or vows he won't be *licked*—to the herald's staff of Hermes, the caduceus of Mercury, the wand of Æsculapius, and the rods of Moses and the contending sorcerers—to the mystic bundle of nine twigs, in honor of the nine muses, that Dr. Busby loved to wield, and which many a simple English parent believes Solomon, in all his glory, recommended as an element in domestic jurisdiction—to the sacred wands of savage tribes, the staffs of our constables and sheriffs, and the highly-polished gold sticks and black rods that hover about the ante-rooms of courts at St. James or Portsoken. The rule of thumb has been said to be the government of this world; and what is this thumb but a short stick, a *sceptre*, emblematic of a sovereign authority, which none dares to dispute? 'The stick,' says the Egyptian proverb, 'came down from heaven.'"

But the only sticks about which the author cares to speak, on the present occasion, are physicians' canes, barbers' poles, and the twigs of rue which are still strewn on a ledge before the prisoner in the dock of a criminal court. The physician's cane, a very ancient part of his insignia, has, like the three-tailed wig, disappeared within the last century. Time was when no doctor of medicine would have ventured to pay a professional visit, or even to be seen in public, without this mystic wand and the oracular head-gear. The celebrated gold-headed cane which Radcliffe, Mead, Askew, Pitcairn, and Baillie successively bore, is preserved in the College of Physicians, bearing the arms of those gentlemen. In one respect it deviated from the physician's cane proper, in its having a cross-bar, almost like a crook; whereas a physician's wand ought to have a knob at the top. We discoursed, in former numbers of this journal, of the adventures of "the gold-headed cane," in connection with the portraits and character of those who were in succession its possessors. The knob of the physician's cane, "in olden times, was hollow, and contained a vinaigrette, which the man of science always held to his nose when he approached a sick person, so that its fumes might protect him from the noxious exhalations of his patient."

The custom of sprinkling aromatic herbs before the prisoners, when brought into court for trial, arose from the abominable state of the prisons, so that the poor creatures dragged from them and placed in the dock were frequently in such an offensive condition that the noxious effluvia from their bodies made even seasoned criminal lawyers turn pale. From the same cause came the chaplain's bouquet, with which that reverend officer was always provided when accompanying a criminal to Tyburn.

The complete separation of the insignia of the surgeons and barbers dates but little, if at all, beyond the present century. Lord Thurlow, in a speech delivered in the House of Peers on the 17th of July, 1797, opposing the surgeons' incorporation bill, said that, "by a statute still in force, the barbers and surgeons were each to use a pole. The barbers were to have theirs blue and white, striped, with no other appendage; but the surgeons', which was the same in other respects, was, likewise, to have a gallipot and a red rag, to denote the particular nature of their vocation." The mistake of the chancellor, in this description, is corrected by the author, who says that the chirurgical pole, properly tricked out, ought to have a line of blue paint, another of red, and a third of white, winding round its length, in a regular serpentine progression,—the blue representing the venous blood, the more brilliant color the arterial, and the white thread being symbolic of the bandage used in tying up the arm after withdrawing the ligature.

> "Possibly, in ancient times, the physician's cane and the surgeon's club were used more actively. For many centuries fustigation was believed in, as a sovereign remedy for bodily ailments as well as moral failings, and a beating was prescribed for an ague as frequently as for picking and stealing. This process Antonius Musa employed to cure Octavius Augustus of sciatica. Thomas Campanella believed that it had the same effect as colocynth administered internally. Galen recommended it as a means of fattening people. Gordinus prescribed it in certain cases of nervous irritability: 'Si sit juvenis, et non vult obedire, flagelletur frequenter et fortiter.' In some rural districts ignorant mothers still flog the feet of their children, to cure them of chilblains. And there remains on record a case in which club-tincture produced excellent results on a young patient to whom Desault gave a liberal dose of it."

Next to his cane, the physician's wig was the most important of his accoutrements. Our readers may have read of allusions to the dress doctorial in olden times, but few of them have seen so minute a description of the received costume as in the following lines:—

> "Each son of Sol, to make him look more big,
> Had on a large, grave, decent, three-tailed wig;
> His clothes half-trimmed, with button-holes behind,
> Stiff were the skirts, with buckram stoutly lined;
> The cloth-cut velvet or more reverend black,
> Full made, and powdered half-way down his back;

> Large decent cuffs, which near the ground did reach,
> With half-a-dozen buttons fixed on each.
> Grave were their faces; fixed in solemn state,
> These men struck awe, their children carried weight:
> In rev'rend wigs old heads young shoulders bore,
> And twenty-five or thirty seemed threescore."

The last wig worn by a doctor, off the stage, was by Dalmahoy, who, with the title of colonel, was celebrated as a vender of drugs and nostrums of all sorts—sweetmeats, washes for the complexion, scented oil for the hair, pomades, love-drops, and charms.

The last of the silk-coated physicians, who held on to the old costume, was Dr. Henry Revell Reynolds, one of the physicians who was in attendance on George III., during his long and melancholy affliction—insanity.

> "Though this gentleman came quite down to living times, he persisted to the end in wearing the costume—of a well-powdered wig, silk coat, breeches, stockings, buckled shoes, gold-headed cane, and lace ruffles—with which he commenced his career. He was the Brummell of the Faculty, and retained his fondness for delicate apparel to the last. Even in his grave-clothes the coxcombical tastes of the man exhibited themselves. His very cerements were of 'a good make.'
>
> 'Here well-dressed Reynolds lies,
> As great a beau as ever;
> We may, perhaps, see one as wise,
> But sure a smarter—never!'"

Changes in the mode of physicians visiting their patients were gone through in England nearly similar to those which have occurred in our American cities. At first, visits were made on horseback, and subsequently, in a carriage; but, in London, it was the fashion for doctors to sit sideways on their horses and in foot-clothes like women.

> "In our own day an equipage of some sort is considered so necessary an appendage to a medical practitioner, that a physician without a carriage (or a fly that can pass muster for one) is looked at with suspicion. He is marked down *mauvais sujet*, in the same list with clergymen without duty, barristers without chambers, and gentlemen whose Irish tenantry obstinately refuse to keep them supplied with money."

The author closes his notice of the cane, wig, silk coat, stockings, side-saddle, and carriage of the old physician, with referring to the muff, in which, in cold weather, his fingers and forearms were incased. We confess to a fondness for the muff which, in our severe winters, would be not only a luxury but a positively healthy portion of dress, that ought not to be monopolized by the other sex.

The chapter on "Early English Physicians," in the "Book" before us, abounds in curious retrospective lore. Among the more celebrated and learned of the class under notice, was Dr. John Phreas, who was born about the beginning of the fifteenth century and educated at Oxford, where he obtained a fellowship on the foundation of Baliol College. Italy was then and for a long period afterward the chief seat of medical learning, and to that country went a number of the most eminent English physicians to complete their studies and acquire a knowledge of anatomy and clinical medicine not procurable at home. Phreas obtained his degree at Padua, and in that section of the peninsula he gained a large fortune by the practice of his profession. He was a poet and an accomplished scholar. Some of his epistles, in MS., are still preserved in the Baliol library and at the Bodleian. The gift of a bishopric from Pope Paul II., for his translation of Diodorus Siculus, cost him his life. "A disappointed candidate for the same preferment is said to have poisoned him before the day appointed for his consecration."

Dr. Thomas Linacre, one of the chief founders and the first president of the London College of Physicians, was a learned doctor, both in medicine and theology; and physician successively to Henry VII., Henry VIII., Edward VI., and the Princess Mary; thus exhibiting in his own person a conjunction of honors rarely conferred on any individual, however learned and estimable he may have been. So distinguished a man merits the introduction here of a few particulars not found in Mr. Jeaffreson's pages. Linacre was the first Englishman who read Aristotle and Galen in the original Greek. On his travels in Italy, he was received with marked distinction at Florence by Lorenzo de Medici; he studied eloquence at Bologna under Politian, one of the most elegant Latinists in Europe. On his return to England, among other occupations, he taught the Princess Catharine the Italian language, and wrote a treatise on mathematics, and another on grammar, the latter of which was pronounced by Melancthon to be inferior to none of its kind then extant. His pure Latinity elicited the praises of his friend Erasmus, who said of him, that he was "*vir non exacti tamen sed severi judicii.*"* The scriptural readings of Linacre sometimes led him to conclusions which were not indicative of his being a very profound theologian. He read, for the first time, shortly before his death, the New Testament; and after having gone over the 5th, 6th, and 7th chapters of St. Matthew, he threw the book away, and swore that this was either not the Gospel, or we were not Christians. Without pretending to justify the impatient criticism of Linacre, we are bound to confess that the sermon on the mount by our Saviour, as found in the chapters just named, is not the code which governs the conduct of all professing Christians. A fling at one's neighbor's misdeeds or at his doctrinal errors is too often made at the expense of the mildness, meekness, and self-abasement which theoretically are supposed to belong to the religious censor.

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* The Gold-Headed Cane, pp. 80–3. By Dr. Macmichael.

Linacre bequeathed his house, that in which the College of Physicians first met, to this corporation. On this house the physician's arms, granted by Christopher Barker, Garter King-at-Arms, Sept. 20, 1546, may still be seen. The motive for Linacre taking holy orders, before his death, is not known. "Possibly he imagined the sacerdotal garb would be a secure and comfortable clothing in the grave." In quoting this suggestion of the author, we must come in for a share of the stricture on its flippancy.

In the generation next succeeding that of Linacre, was John Kaye, or Key—Caius he has long been somewhat pedantically named. Like his predecessor, Caius is associated with letters not less than with medicine. He was first heard of as reading lectures on Aristotle in the University of Padua—an unexpected post of honor to be enjoyed by an Englishman. He procured an act of incorporation for Gonvil College, Cambridge University, with the additional title of Caius, and endowed it afterward with considerable estates for the maintenance of an additional number of fellows and scholars. Caius was Fellow, Censor, and President of the (London) College of Physicians. He died, 1573, in the sixty-third year of his age. On his tomb, in his college, and constructed under his own direction, was inscribed the following brief epitaph: "*Fui Caius. Vivit post funera virtus.* Obiit 1573, Æt. 63."

The year of the death of Caius was that of the birth of Mayerne, who became a baron of France and a knight of England. He was a lucky courtier if not a skillful physician.

> "After leaving France and permanently fixing himself in England, he kept up his connection with the French, so that the list of his monarch patients may be said to comprise two French and three English sovereigns: Henry IV. and Louis XIII. of France, and James I., Charles I., and Charles II. of England. Sir Theodore Mayerne died at Chelsea, in the eighty-second year of his age, on the 15th of March, 1665."

His library went to the College of Physicians, and his wealth to his only daughter, who was married to the Marquis of Montpouvillon. Mayerne was one who, not long ago, would have been called a heroic practitioner. Calomel was habitually prescribed by him in scruple doses; sugar of lead he mixed largely in his conserves. His sweetest compound was his "Balsam of Batts," strongly recommended as an unguent for hypochondriacal persons, into which entered adders, bats, sucking whelps, earth-worms, hog's grease, the marrow of a stag, and the thigh-bone of an ox.

A greater man comes before us in the person of Harvey, who died two years after Mayerne, or in 1667. Aubrey says of the discoverer of the circulation of the blood:—

"He was not tall but of the lowest stature, round-faced, olivaster (like waintscott) complexion, little eie—round, very black, full of spirit; his haire was black as a raven, but quite white twenty years before he dyed. I remember he was wont to drink coffee, which he and his brother Eliah did, before coffee-houses were in fashion in London. He was, as all the rest of his brothers, very cholerique; and in his younger days wore a dagger (as the fashion then was;) but this doctor would be apt to draw out his dagger upon very slight occasion. He rode *on horseback, with a foot-cloath, to visit his patients, his man following on foot, as the fashion then was, was very decent, now quite discontinued.*"

The most noted of the physicians of the Elizabethian age was William Bulleyn, related to the unfortunate Anna Boleyn, the frail and beautiful wife of Henry VIII. Mr. Jeaffreson speaks in high terms of the acuteness and learning displayed in the numerous works of William Bulleyn, "which are among the most interesting prose writings of the Elizabethian era." In his "Book of Simples," the doctor discourses pleasantly on the virtues of different herbs as well as on the more choice productions of the garden. "Grapes are spoken of as cultivated and brought to a high state of perfection in Suffolk and other parts of the country. Hemp is humorously called gallow grasse, or neck weed." Bulleyn was a bold and courageous surgeon. "Soft chirurgians," he used to say, "make foul sores." He recommends the surgeon to have a gladsome countenance, so as to reassure the patient. His recipes for "an embrocation," "a good emplaster," and "*electuarium de gemmis*," are curiosities in their way. Did room permit, we would transcribe them. Among many wonderful properties of the electuarium, it causeth kings and noblemen to be bold-spirited, the body to smell well, and it engendereth to the face good color.

Apropos of this, the author introduces the following prescription which an unfortunate physician wrote for a nervous lady:—

"℞.—Great Western, 350 shares;
Eastern Counties }
North Middlesex } āā 1050.
M. ft. Haust. i. Om. noc. cap.

"This direction to a delicate gentlewoman to swallow nightly two thousand four hundred and fifty railway shares was regarded as evidence of the physician's insanity, and the management of his private affairs was forthwith taken out of his hands. But assuredly it was as rational a prescription as Bulleyn's Electuarium Gemmis."

In the prescriptions of this physician which most excite one's risibility is "a smal yong mouse rosted," for the cure of a child suffering under a nervous malady. By many this would be preferred to a preparation of snails, recommended on the same authority. "Snayles broken from the shelles and sodden in whyte wyne, with oyle and sugar, are very holsome because they be hwat and moist for the straightness of the lungs and cold cough. Snails stamped with camphory and leven will draw forth prycks in the flesh."

Among the most famed physicians of the seventeenth century was Sir Thomas Browne, whose writings are now deservedly classical. The chief of these are "Religio Medici," and "Pseudoxia Epidemica," a treatise on vulgar errors. After taking his degrees of B.A. and M.A. in Oxford, he traveled over different parts of Europe, and obtained his degree of doctor of medicine at Leyden.

> "Returning to England, he settled at Norwich, married a rich and beautiful Norfolk lady named Mileham, and for the rest of his days resided in that ancient city, industriously occupied with an extensive practice, the pursuits of literature, and the education of his children. When Charles II. visited Norwich in 1671, Thomas Browne, M.D., was knighted by the royal hand."

The eminent physician, traveled and accomplished, and who had seen much of the world, was, notwithstanding, diffident to shyness. As was his manner, so was his dress. "In his habit of cloathing, he had an aversion to all finery, and affected plainness both in fashion and ornaments."

The "Religio Medici" created an unprecedented sensation at the time of its appearance, but it shocked the orthodox by its free and searching inquiries, which, in their eyes, amounted to infidelity, while it was open, at the same time, to the charge of scientific heresies.

Sir Kenelm Digby is introduced by the author as one of the adverse critics of the "Religio Medici." He finds a place in the list of professional worthies, as an amateur healer of wounds by his celebrated Sympathetic Powder, which consisted of blue vitriol dissolved, again crystallized, and pulverized, and exposed for a length of time to a summer sun. "It cured wounds in the following manner: if any piece of a wounded person's apparel having on it the stain of blood that had proceeded from the wound was dipped in water holding in solution some of this sympathetic powder, the wound of the injured person would forthwith commence a healing process. It mattered not how far distant the sufferer was from the scene of operations, or whether he was conscious of them." Cases were gravely related by Sir Kenelm and others of the efficacy of this powder. What absurdity was ever yet palmed on public credulity that was not bolstered up by cases and certificates! "For a time the sympathetic powder was very generally believed in, and it doubtless did as much good as harm, by inducing people to throw from their wounds the abominable messes of grease and irritants which were then honored by the name of plasters."

The inventor of this wonderful powder is evidently a favorite with Mr. Jeaffreson, who lavishes on him a string of epithets, as "the eccentric, gallant, brave, credulous, persevering, frivolous, Sir Kenelm Digby. A Mecænas, a Sir Philip Sydney, a Dr. Dee, a Beau Fielding, and a Dr. Kitchener all in one, this man is chief of these extravagant characters that astonish the world at rare intervals, and are found nowhere except in actual life. No novelist of the most advanced section of the idealistic school would dare to create such a personage as Sir Kenelm." From the period when he was knighted, after his return from attending Charles I., (then Prince of Wales,) at Madrid, he was before the world as courtier, cook, lover, warrior, alchemist, gentleman of the bedchamber, and commissioner of the navy. "It is difficult to say to which he was most devoted—his king, his church, literature, or his beautiful and frail wife, Venetia Stanley, whose charms fascinated the many admirers on whom she distributed her favors, and gained her Sir Kenelm for a husband when she was the discarded mistress of Richard, Earl of Dorset. She had borne the earl children; so his lordship, on parting, settled on her an annuity of five hundred pounds ($2500) *per annum.*"

"The lives of three physicians—Sydenham, Sir Hans Sloane, and Heberden—completely bridge over the uncertain period between old empiricism and modern science." On the signal merits of Sydenham as a medical reformer, by bringing physicians back to a careful observation of nature, we are not called upon here to expatiate, nor to explain his meaning when he told Sir Richard Blackmore, in reply to a question as to the best course for a medical student to pursue: 'Read Don Quixote; it is a very good book—I read it still.'"

Sir Hans Sloane was "an Irishman by birth and a Scotchman by descent; he exhibited in no ordinary degree the energy and politeness of either of the sister countries. After a childhood of extreme delicacy, he came to England and devoted himself to medical study and scientific investigation." Among other distinctions won by him, he was made President of the College of Physicians in 1719, and President of the Royal Society, (on the death of Sir Isaac Newton,) in 1727, and he was appointed physician to George II. In addition to these honors, he was the first medical practitioner advanced to the dignity of a baronetcy.

"On the death of Sir Hans Sloane, on the 11th of January, 1753, his museum and library passed into the hands of the nation for a comparatively small sum of money, and became the nucleus of our British Museum." Sir Hans had two medical successors in the presidency of the Royal Society—Sir John Pringle, Bart., elected November 30, 1772, and William Hyde Wollaston, M.D., elected June 29, 1820.

A chapter on "The Apothecaries and Sir Samuel Garth" contains sundry particulars on the College of Apothecaries, and the differences between this body and the College of Physicians. The outlines of the latter were given by us in a former number of this journal, (March, 1860,) introductory to a review of the Medical Institutions of Philadelphia. The first charter obtained in the fourth year of James I. was for the incorporation into one body of the Grocers and Apothecaries of the City of London. In the long and angry disputes between the physicians and apothecaries, Pope took the side of the former. "Like Johnson, Parr, and all men of enlightenment and sound scholarship, he had a high opinion of the faculty." To Dr. Arbuthnot he wrote:—

> "Friend to my life, which did not you prolong
> The world had wanted many an idle song."

His habitual tone, when speaking of the medical profession, was that of warm admiration and affection. In the "Imitations of Horace," he says:—

> "Weak though I am of limb, and short of sight,
> Far from a lynx and not a giant quite,
> I'll do what Mead and Cheselden advise,
> To keep these limbs and to preserve these eyes."

"It is true that he elsewhere ridicules Mead's fondness for rare books, and Sloane's passion for butterflies; but at the close of his days he wrote, in a confidential letter to a friend of the faculty, 'They are, in general, the most amiable companions and the best friends, as well as the most learned men I know.'"

In speaking of "the origin of the memorable Dispensarian Campaign between the College of Physicians and the Company of Apothecarries," Mr. Jeaffreson makes a remark which is, we fear, not without its application to some of our own cities. "Half the peddling little charitable institutions, dispensaries or hospitals, that at the present time rob the rich and do harm to the poor in every quarter of London, originated in 'the friends' of young physicians and surgeons conspiring together to get them 'the position of being attached to a hospital staff.'"

The name of Garth is better known in the annals of literature than of medicine. In his poem, "The Dispensary," the apothecaries and anti-dispensarians were covered with ridicule. The dispensarians was the name given to the physicians of the college who established a dispensary where medicines were vended to the poor at cost price. Other members of the college were opposed to this measure, and hence were called anti-dispensarians. With these latter the apothecaries combined, and they agreed not to recommend the dispensarians. Garth, full of jest and amiability, did more to create merriment at the Kit-Kat Club than either Swift or Arbuthnot.

> "His practice was a good one, but his numerous patients prized his *bon mots* more than his prescriptions. His enemies averred that he was not only an epicure, but a profligate voluptuary and an infidel; Pope, however, wrote of him after his death: 'If ever there was a good Christian without knowing himself to be so, it was Dr. Garth.'"

It must ever be borne in mind, in favor of Garth's claims on posterity, that to him Dryden owed honorable interment.

> "When the great poet died, Garth caused his body to be conveyed to the College of Physicians, and started a public subscription to defray the expenses of the funeral. He pronounced an oration over the deceased at the College in Warwick Lane, and then accompanied it to Westminster Abbey."

Many are the stories preserved of Garth's social humor. The one, of his postscript to a letter to a friend, in which he says that he would write more, but for a d—d tall, impudent Irishman looking over his shoulder all the time, and the denial of the fact roared out by the man, has found its way into Joe Miller's jest-book. Another is less known: "Stumbling into a Presbyterian church, one Sunday, for pastime, he found a pathetic preacher shedding tears over the iniquity of the earth. 'What makes the man greet [weep]?' asked Garth of a by-stander. 'By my faith,' was the answer, 'and you too would greet, if you were in his place and had as little to say.' 'Come along, my dear fellow,' responded Garth to his new acquaintance, 'and dine with me. You are too good a fellow to be here.'"

Another of his repartees is worth repeating:—

> "At the Kit-Kat he once stayed to drink long after he had said he must be off to see his patients. Sir Richard, more humane than the physician, or possibly, like the rest of the world, not disinclined to be virtuous at another's expense, observed: 'Really you ought to have no more wine, but be off to see those poor devils.'
>
> "'It's no great matter,' Garth replied, 'whether I see them to-night or not; for nine of them have such bad constitutions, that all the physicians in the world can't save them; and the other six have such good constitutions, that all the physicians in the world can't kill them.'"

Apropos of "Quacks," which form the subject of the sixth chapter of the work before us, we may remark that the profession is making advances in medical ethics as it is in scientific discovery and applications. We find here recorded some instances of quackery in eminent medical men of the last century which would compromise the standing of any respectable physician of the present day. An outline history of the progress of quackery and the deportment and arts of the quack is pleasantly told by the author.

> "Queen Anne's weak eyes caused her to pass from one empiric to another for

the relief they all promised to give, and in some cases even persuaded that they gave her. She had a passion for quack oculists; and happy was the advertising scoundrel who gained her majesty's favor with a new collyrium. For, of course, if the greatest personage in the land said that Professor Bugalo was a wonderful man, a master of his art, and inspired by God to heal the sick, there was no appeal from so eminent an authority. How should an elderly lady, with a crown on her head, be mistaken? Do we not hear the same arguments every day in our own enlightened generation, when the new chiropodist, or rubber, or inventor of a specific for consumption, points to the social distinction of his dupes as conclusive evidence that he is neither supported by vulgar ignorance nor afraid to meet the most searching scrutiny of the educated? Good Queen Anne was so charmed with two of the knaves who by turns enjoyed her countenance, that she had them sworn in as her own oculists in ordinary, and one of them she was even so silly as to knight. This lucky gentleman was William Reade, originally a botching tailor, and to the last a very ignorant man, as his 'Short and Exact Account of all the Diseases incident to the Eyes' attests; yet he rose to the honor of knighthood and the most lucrative and fashionable physician's practice of his period. Surely, every dog has his day." "It is true that Sir William Reade was unable to read the book which he had written (by the hand of an amanuensis)."

"Queen Anne's other 'sworn oculist,' as he and Reade termed themselves, was Roger Grant, a cobbler and Anabaptist preacher. He was a prodigiously vain man, even for a quack, and had his likeness engraved on copper." "This man, according to the custom of his class, was in the habit of publishing circumstantial and minute accounts of his cures. Of course his statements were a tissue of untruths, with just the faintest possible admixture of what was not altogether falsehood."

The author enumerates, among "the medical quacks" of the last century, the Rev. John Hancocke, D.D. This gentleman should rather be called a clerical quack, who published a small tract in 1723, a copy of which is in our possession, entitled "*Febrifugum Magnum;* or Common Water the best Cure for Fevers, and probably for the Plague." The history of empiricism would present little to revolt common sense and sound ethics, were its pages to include no worse features than those displayed in the "*Febrifugum Magnum.*" No concealment of the article used is attempted, no gain results to the propounder, and each person is left to make a trial on or by himself of a liquid which is, avowedly, indispensable to health, and a powerful auxiliary, if not a primary agent, in the cure of disease. In a more restricted range, we might make the same remark of good Bishop Berkeley's "Tar Water," which at one time enjoyed so much vogue as a panacea.*

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* The reader, desirous of learning the history and therapeutical applications of the use of common water as recommended by Hancocke, and of tar water as praised by Berkeley, will be gratified by a reference to Dr. Bell's volume on "Baths," &c.

The belief in the Loutherbourg miracles, performed by a man and his wife of that name, was a good specimen of the credulity of the latter part of the eighteenth century. These impious creatures proclaimed that God had endowed them with a miraculous power of healing the impoverished sick, by looking upon and touching them. The dupes to these pretensions were among all classes. "Quacks have, in all ages, found staunch supporters among the powerful and the affluent."

> "Dumoulin, the physician, observed at his death, that 'he left behind him two great physicians, Regimen and River Water.' A due appreciation of the truth embodied in this remark, coupled with that masterly assurance, without which the human family is not to be fleeced, enabled the French quack Villars to do good to others and to himself at the same time. This man, in 1723, confided to his friends that his uncle, who had recently been killed by an accident at the advanced age of one hundred years, had bequeathed to him the recipe for a nostrum which would prolong the life of one who used it to a hundred and fifty, provided only that the rules of sobriety were never transgressed. Whenever a funeral passed him in the street, he said aloud: 'Ah! if that unfortunate creature had taken my nostrum, he might be carrying that coffin, instead of being carried in it.' This nostrum was composed of nitre and Seine water, and was sold at the ridiculously cheap rate of five francs [a dollar] a bottle. Those who bought it were directed to drink it at certain stated periods, and, also, to lead regular lives, to eat moderately, drink temperately, take plenty of bodily exercise, go to and rise from bed early, and to avoid mental anxiety. In an enormous majority of cases the patient was either cured or benefited."

The Abbé Pons declared Villars to be the superior of the marshal of the same name. "The latter," said he, "kills men, the former prolongs their existence." But Villars's secret finally leaked out; and his patients deserted him, with probably less wisdom than they manifested in coming to him.

Quite an amusing chapter is taken up with the sayings and doings, whims and oddities of the celebrated Dr. Radcliffe. The most prominent of these were brought to the notice of our readers in our department "The Editor's Table," of this journal for 1860. Radcliffe exhibited a compound of meanness of disposition in money matters on a small scale, and many instances of considerate liberality to those in distress. His poor relations had, indeed, no share of this liberality during his lifetime; but his posthumous fame, in this particular, is established on an immovable basis, by his munificent bequests to the University of Oxford, in the founding and endowment of the Radcliffe Library, the Radcliffe Observatory, the Radcliffe Infirmary, and the Radcliffe Traveling Fellowships. What a shining example for any of our rich physicians of the present age, who happen to be burdened with a large fortune and have no children! Radcliffe provided liberally for his poor relations after his death.

"Radcliffe, the Jacobite partisan, the physician without learning, and the luxurious *bon-vivant,* who grudged the odd sixpence of his tavern scores, was born at Wakefield, in Yorkshire, in the year 1650. His extraction was humble, his father being only a well-to-do yeoman." "But, though Radcliffe was a plebeian, he contrived, by his shrewd humor, arrogant simplicity, and immeasurable insolence to hold both Whigs and Tories in his grasp. The two factions of the aristocracy bowed before him; the Tories from affection to a zealous adherent of regal absolutism, and the Whigs from a superstitious belief in his remedial skill, and a fear that in their hours of need he would leave them to the advances of death."

In the chapter headed "The Doctor as a *Bon-vivant,*" we learn that "the bottle and the board were once the doctor's two favorite companions. More than one eminent physician died in testifying his affection for them. In the days of tippling they were the most persevering of tavern-haunters. No wonder that some of them were as fat as Daniel Lambert, and that even more died sudden deaths from apoplexy. The obesity of Dr. Stafford was celebrated in an epitaph:—

'Take heed, O, good traveler, and do not tread hard,
For here lies Dr. Stafford, in all this church-yard.'

"Dr. Beddoes was so stout that the Clifton ladies used to call him their 'walking feather bed.' Dr. Flemyng weighed twenty stone and eleven pounds, till he reduced his weight by abstinence from the delicacies of the table, and by taking a quarter of an ounce of Castile soap every night.

"Dr. Cheyne's weight was thirty-two stone, till he cured himself by persevering in a temperate diet. Laughing at two unwieldy noblemen, whose corpulence was the favorite jest of all the wits in the court, Louis XV. said to one of them, 'I suppose you take little or no exercise.' 'Your majesty will pardon me,' replied the bulky duke, 'for I generally walk two or three times round my cousin every morning.'"

The physicians of the seventeenth and eighteenth centuries, if they did not lead, certainly put no restraints, either by precept or example, on the intemperance prevailing among all classes. Tobias Walker and John Archer, both physicians to Charles II., were representative men of their class. The first was a strenuous advocate for the free use of wine, which he calls the physic that does not dull, but sets a true edge upon nature, and after operation leaveth no venomous contact. "John Archer, the author of 'Every Man his own Doctor,' and 'Secrets Disclosed,' was an advocate of generous diet and enlightened sensuality." Like Whitaker, he did not think it beneath him to keep a number of apothecaries' shops and to live by the sale of drugs as well as fees. His cordial diet drink was advertised as costing 2*s.* 6*d.* (50 cents) per quart; for a box containing 30 morbus pills, the charge was 5*s.*; 40 corroborating pills were to be had for the same sum. He recommended his patients to smoke, and he sold tobacco, of a quality superior to the ordinary articles of commerce, at 2*s.* and 1*s.* an ounce.

"Whilst Whitaker and Archer were advising men to smoke and drink, another physician of the court was inventing a stomach-brush, in some respects much like the bottle-brush with which fly poison ought to be taken from the interior of black bottles before wine is committed to them. This instrument was pushed down the gullet, and then poked about and turned round, much in the same way as a chimney-sweeper's brush is handled by a dextrous operator on soot. It was recommended that gentlemen should thus sweep out their insides not oftener than once a week, but not less frequently than once a month. What a race of men our ancestors must have been! The curious may find not only a detailed description, but an engraved likeness of this remarkable stomach-brush, in the *Gentleman's Magazine*, vol. xx., for the year 1750."

Was this instrument ever really used in the manner just described? We are ourselves skeptical on this point.

Freind, the historian of Medicine, continually visited his patients in a state of intoxication. Gibbons—the "Nurse Gibbons," as he was contemptuously called by Radcliffe—did something for English dinner-tables worth remembering.

"He brought into domestic use the mahogany, with which one has so many pleasant associations. His brother, a West India captain, brought over some of the wood as ballast, thinking it might possibly turn to use. At first the carpenters, in a truly conservative spirit, refused to have anything to do with the 'new wood,' saying it was too hard for their tools. Dr. Gibbons, however, had first a candle-box and bureau made for Mrs. Gibbons out of the condemned material. The bureau so pleased his friends, among whom was the Duchess of Buckingham, that her grace ordered a similar piece of furniture, and so introduced the wood into high life, where it quickly became the fashion."

In addition to the names already given, we find recorded in this volume those of Dr. George Fordyce, Beauford, and Barrowby, as *bon-vivants*, of whom various characteristic anecdotes are told. Sir Richard Jebb is introduced here, in a forced connection, as careless about humoring the stomach, in his dietetic advice to his patients. This physician was celebrated for his abrupt and harsh replies to his patients, some of whom were not backward in retorting on him for his rudeness. "That's my way," said he to a noble invalid, astonished at his rudeness. "Then," answered the sick man, pointing to the door, "I beg you will make that your way." Even to the king Sir Richard was plain spoken. George the Third lamented to him the restless spirit of his cousin, Dr. John Jebb, the dissenting minister. "And, please your majesty," was the answer, "if my cousin were in heaven, he would be a reformer."

The chapter, for the most part devoted to the feasting of physicians, is concluded with a few words on their fasts. The most abstinent collection of medical men was that of a scientific club that used to meet in the house of a grocer in the Strand, London. The principal members were Drs.

Heberden, Turton, Geo. Baker, Sir John Pringle, and Sir Wm. Watson, and Lord C. Cavendish, who officiated as president. "Each member paid sixpence per evening for the use of the grocer's dining-room. The club took in one newspaper, and the only refreshment allowed to be taken at the place of meeting was—water." We have been accustomed to speak frequently of the sumptuary regulations of the old medical club of a limited number of Philadelphia physicians, which confine the refreshments of the evening entirely to tea and coffee, with bread and butter and a few light cakes. It has been in existence for nearly thirty years, and of its eight original members, who had been editors of the North American Medical and Surgical Journal, all are still living.

"Fees" make an amusing chapter in the "Book," and furnish matter for many extracts. It is not long since we touched on the subject,* and, partly on this account and partly owing to our rapidly waning space, we must forego, in a great measure, the present temptation. The contrasted moods of a patient, when sick and suffering, and looking to his doctor as the saviour of his life, and when convalescent and in recovered health, are well hit off by the author.

> "Illustrative of the same truth is a story told of Bouvart. On entering one morning the chamber of a French marquis, whom he had attended through a very dangerous illness, he was accosted by his noble patient in the following terms: 'Good-day to you, M. Bouvart; I feel quite in spirits, and think my fever has left me.' 'I am sure it has,' replied Bouvart, dryly. 'The very first expression you used convinced me of it.' 'Pray, explain yourself.' 'Nothing is easier. In the first days of your illness, when your life was in danger, I was your *dearest friend;* as you began to grow better I was your *good Bouvart;* and now I am M. Bouvart; depend upon it, you are quite recovered.'"

"Sir," said Sir Theodore Mayerne to a friend whose proffered fee he, unexpectedly to the latter, had pocketed, "I made my will this morning, and if it should appear that I refused a fee, I might be deemed *non compos.*" The author does justice to Abernethy in denying the authenticity of many of the stories told of this eminent surgeon, as illustrative of his brusque and even rude speech and ways. On all proper occasions he was considerate and kind, and was very careful not to take fees from patients if he suspected them to be in indigent circumstances. "Side by side with stories of the benevolence of the faculty frequent anecdotes of their stinginess might be told." As we have not room at this time to record their liberal doings, we shall be readily excused for omitting to repeat instances of their reverse conduct, believing firmly, moreover, that these latter are exceptional to the general practice of physicians in receiving honorariums from their patients.

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* North American Medico-Chirurgical Review, November, 1859.

We only notice the chapter on "Bleeding" to record our earnest protest against the following sentence, as mischievously inaccurate: "Blood-letting," says Mr. Jeaffreson, "so long a popular remedy with physicians, has, like tobacco-smoking for medicinal purposes, fallen into disuse and contempt." We confidently affirm that no physician or surgeon who is well read in clinical annals, and a calm and experienced observer of disease, will adopt such a sweeping conclusion. True science acknowledges no such vagaries of fashion, no such jumping from one extreme to another.

We are fortunately prevented from what we should otherwise feel the necessity of passing our prescribed limits by following the author in his chapter on Dr. Richard Meade, the learned, the lucky, the urbane, the tasteful and the munificent physician, who was the contemporary of Radcliffe and Freind. His personal traits and professional character and liberality have been sketched in our pages, *apropos* of our notice of "the Gold-headed Cane."* It was truly observed by Dr. Johnson, that "Dr. Meade lived more in the broad sunshine of life than almost any man." This eminent physician had, however, his quarrels, the most bitter of which was that with Woodward, Professor of Physic at the Gresham College, by whom he was bitterly attacked in the "State of Physic and Diseases." On one occasion some insult offered by Woodward so infuriated Mead, that the latter drew his sword and called on his adversary to defend himself. The duel terminated in Mead's favor, as far as martial prowess was concerned, for he disarmed Woodward and ordered him to beg his life. "Never, till I am your patient!" was the happy answer of Woodward.

At another time Mead had to run, if not for his life at least to save his peruke and himself from a good scratching from the hands of Sarah, Duchess of Marlborough, who became infuriated at a remark which the physician had dared to make when visiting the sick Duke.

"Mead was not the first of his name to enter the medical profession. William George Meade was an eminent physician at Tunbridge Wells; and, dying there on the 4th of November, 1652, was buried at Ware, in Hertfordshire. This gentleman left £5 ($25) a year forever to the poor; but he is more remarkable for longevity than generosity. He died at the extraordinary age of 148 years 9 months. This is one of the most astonishing instances of longevity on record. Old Parr, dying at 152 years, exceeded it only by 4 years. The celebrated Countess of Desmond was some years more than 140 at the time of her death. Henry Read, minister of Hardwicke, Northampton County, numbered only 132 years; and the Lancashire woman (*the Cricket of the Hedge*) did not outlive her 141st year. But all these ages become insignificant when put by the side of 169 years, to which Henry Jenkins protracted his earthly sojourn."

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* North American Medico-Chirurgical Review, March, 1860.

"The imagination as a remedial power," is a fine theme for narrative and commentary. "And if the delusions of talismans, amulets and chains, and the impostures of Mesmer, have had no greater consequences, they have at least afforded to the observant and reflective much valuable instruction with regard to the constitution of the human mind."

"Red objects had a mysterious influence on inflammatory diseases; and yellow ones had a similar power on those who were discolored with jaundice. Edward II.'s physician, John of Gaddesden, informs us: 'When the son of the renowned King of England lay sick of the small-pox, I took care that everything round the bed should be of a red color, which succeeded so completely that the Prince was restored to perfect health without a vestige of a pustule remaining.' Even as late as 1765 this was put in practice to the Emperor Francis I."

In England, more than in any other region of Christendom, the superstition of the miraculous power over disease by the royal touch found supporters.

"From Edward the Confessor, down to Queen Anne, who laid her healing hands on Samuel Johnson, it flourished; and he was a rash man who, trusting to the blind guidance of human reason, dared to question that divinity which encircles kingship. Doubtless the gift of money made to each person who was touched did not tend to bring the cure into disesteem. It can be easily credited that, out of the multitude who flocked to the presence of Elizabeth and the Stuart kings for the benefit of their miraculous manipulations, there were many shrewd vagabonds who had more faith in the coin than in the touch bestowed upon them. The majority were, however, as sincere victims of delusion as those who, at the close of the last century, believed in the efficacy of metallic tractors, and those who now unconsciously expose their intellectual infirmity as advocates of electro-biology and spirit-rapping. The populace, as a body, unhesitatingly believed that their sovereigns possessed this faculty as the anointed of the Lord. A story is told of a Papist who, much to his astonishment, was cured of the king's evil by Elizabeth, after her final rupture with the Court of Rome.

"'Now I perceive,' cried the man, 'by plain experience, that the excommunication against the Queen is of no effect; since God hath blessed her with such a gift.'"

Montaigne and Burton are quoted on the power of the imagination; each of these writers treating the subject after his quaint and peculiar fashion. The most notable forerunner of Mesmer in England was Valentine Greatrakes, who, in Charles the Second's reign, performed several "marvaillous cures by the stroaking of the hands."

"Doubtless many of Valentine's patients were suffering, not under scrofulous affections, but comparatively innocent tumors—for his cures were rapid, complete, and numerous. A second impulse gave him the power of curing ague, and a third inspiration of celestial aura imparted to him command, under certain conditions, over all human diseases. His modes of operation were various. When an afflicted person was laid before him, he usually offered up a prayer to God to help him to make him the humble instrument of Divine mercy; and, invariably, when a patient derived benefit from his treatment, he exhorted him to offer up his thanks to his Heavenly Father. After the initiatory supplication the operator passed his hands over the affected part of the sick person's body, sometimes over the skin itself, and sometimes over the clothes. The manipulations varied in muscular force from delicate tickling to violent rubbing, according to the nature of the evil spirits by which the diseased people were tormented. Greatrakes's theory of disease was the scriptural one—the morbific power was a devil, which had to be expelled from the frame in which it had taken shelter. Sometimes the demon was exorcised by a few gentle passes; occasionally it fled like a well-bred dog, at the verbal command of the physician, or retreated on being gazed at through the eyes of the mortal it tormented; but frequently the victory was not gained till the healer rubbed himself—like the rubber who, in our own days, makes a large income at Brighton—into a red face and copious perspiration."

The success of Greatrakes was signal, and certificates of the most marvelous cures were not withheld; but his triumph was of short duration.

"His professions were made the butts of ridicule, to which his presence of mind and volubility were unable to respond with effect. It was asserted by his enemies that his system was only a cloak under which he offended the delicacy of virtuous women, and roused the vile passions of the unchaste. His tone of conversation was represented as compounded of the blasphemy of the religious enthusiast and the blasphemy of the obscene profligate. His boast, that he never received a fee for his professional services, was met by a flat contradiction, and a statement that he received presents to the amount of £100 ($500) at a time from a single individual. This last accusation was never clearly disposed of; but it is probable that the reward he sought (if he looked to any) was restoration, through court influence, to the commission of magistrate for the county, and the lost clerkship of the peace."

Next among curative wonders was Perkin's metallic tractors, which enjoyed uncommon vogue, until it was shown by Dr. Haygarth that two pieces of wood, properly shaped and painted, produced the same miraculous effects on the uninitiated sick. Few individuals have ever gained the celebrity won in a short time by Mesmer, who, without originating a single idea, contrived to accumulate vast wealth and fix his name on a branch of psychological science. Following out the notions of some who had preceded him, he first used steel magnets as a means of cure, when applied externally. Afterward he threw these aside and produced still greater marvels by the employment of his fingers and eyes. His audacity was unequaled. He told Dr. Egg von Ellekon, as a reason why he preferred river to spring water, that the former is exposed to the sun's rays, and is in consequence magnetized, and that he himself, to insure a steady supply from the sun, had magnetized this planet twenty years before. He had charge of the husband of the celebrated school-mistress, Madame Campan, for inflammation of the lungs. His first prescription of an old empty bottle to be put by the side of the patient proving ineffectual,* he seized the occasion of Madame Campan's temporary absence to bleed and blister the sick man—a treatment which proved more efficacious. "But imagine Madame Campan's astonishment, when, on her husband's recovery, Mesmer asked for and obtained from him a written certificate that he had been cured by Mesmerism!" Our contempt for the knave, on such an occasion, must be extended in full measure to the willing dupe who in part makes himself accessory to the fraud thus practiced on the community. As far as related to any scientific pretensions set up in favor of Mesmerism, they were shown to be without any foundation by a Committee of the French Academy, in whose labors Franklin, then in France, participated. Mesmer died in obscurity on the 5th of March, 1815.

In the chapter entitled "Make Way for the Ladies," although not a lady appears, Mr. Jeaffreson says: "Of the many doctresses who have flourished in England during the last two hundred years, only a few have left any memorial of their actions behind them." The most successful of the wise women of the last century was Mrs. Joanna Stephens, who claimed and obtained a grant of £5000 ($25,000) from the British Parliament for a secret remedy which was represented to be a certain cure for the stone. The chief medicines used were calcined egg-shells, snails, soap, and a decoction of certain herbs. "Five thousand pounds for such stuff as this! and the time was coming when the nation grudged an inadequate reward to Jenner, and haggled about the purchase of Hunter's Museum!!"

But a more remarkable case of feminine success in the doctoring line was that of Mrs. Mapp, better known as "Crazy Sally, of Epsom," who was a contemporary of Mrs. Stephens. "She was an enormous fat, ugly, drunken woman, known as a hunter of fairs, about which she loved to reel, screaming and abusive, in a state of roaring intoxication." This attractive lady was a bone-setter, daughter of a man named Wallin, of the same craft, and so much esteemed was she for skill in her art, that the town of Epsom offered her £100 if she would reside there for a year. Crazy Sally awoke one morning and found herself famous. Patients of rank and wealth flocked in from every quarter. In an evil hour she married an Epsom swain and became Mrs. Mapp. Her husband lived with her only a fortnight, during which short space of time he thrashed her soundly twice or thrice, and then decamped with a hundred guineas of her earnings. Mrs. Mapp continued to reside in Epsom, but she visited London once a week. Her journeys to and from the metropolis were performed in a chariot drawn by four horses, with servants wearing splendid liveries. She won the confidence of Sir Hans Sloane to such a degree as to induce him to put his niece under her care, for curvature of the spine, or, to use the scientific language of the newspapers, "whose back had been broken nine years, and stuck out two inches." The circumstances of Mrs. Mapp sitting one evening at the Lincoln's-Inn-Fields theatre, between Taylor, the quack oculist, and Ward, the dry-salter, furnishes one of those *apropos*, which Mr. Jeaffreson so readily snatches at, to an account of this celebrated Chevalier Taylor—"a cunning, plausible, shameless blackguard. Such being his character, of course he was successful in his vocation of quack." Dr. King, in his "Anecdotes of his own Times," speaks of him in the following more laudatory strain:—"No charlatan ever appeared with fitter and more excellent talents, or to greater advantage; he has a good person, is a natural orator, and has a faculty of learning foreign languages. He has traveled over all Europe, and has always with him an equipage suitable to a man of the first quality, and has been introduced to most of the sovereign princes, from whom he has received many marks of their liberality and esteem." Taylor's autobiographic sketch of himself, in which he speaks of his loves and adventures, is a strange medley of rhapsody, boasting, and doubtless a large addition of lies. He used to sign himself "The Chevalier Taylor, Ophthalmiater, Pontifical, Imperial, and Royal." The chevalier had a son, also an oculist and a quack, who is represented in the page before us to be "an illiterate, vulgar, and licentious scoundrel." What shall be thought of posthumous praise when we are told that this man was honored, after his death, with a long memoir in the *Gentleman's Magazine*, as one "whose philanthropy was exalted so fully as to class him with a Hanway or a Howard?"

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* He advised, in the first instance, as the only way to cure M. Campan, "to lay in his bed by his side, one of three things—a young woman of brown complexion, a black hen, or an old bottle." Madame C., of course, preferred the trial of the bottle for her husband.

We shall not follow the author in his chapter on "Messenger Monsey," a coarse and vulgar, yet learned physician, who has left nothing behind him worth recording, if we except some *bon mots* not always fit for ears polite, and caustic repartees uttered with a design to wound and offend.

Culling from three chapters headed "Pedagogues turned Doctors," "Akenside," and "Literature and Art," we shall be able to collect most of the scattered notices in them relating to physicians who attained to more or less celebrity as poets. First among them, in the order of time, although classed among the pedagogues by Mr. Jeaffreson, is Sir Richard

Blackmore. The son of a Wiltshire attorney, he was educated at Westminster and Oxford, residing in all thirteen years in the University. On leaving Oxford, he passed through a course of searching poverty, and became a schoolmaster. This did not prevent him from traveling over most of the then most accessible countries on the continent, and taking his doctor's degree in the University of Padua. The author commits an anachronism in making Sir Richard consult Dr. Heberden as to what authors he should read, and in giving as the answer of the latter, "Don Quixote." The question was asked by Blackmore of Sydenham, and answered as above. The slip is the more noticeable as the true version had been given on a preceding page, (57.)

> "As a poet, Blackmore failed; but as a physician he was for many years one of the most successful men in his profession." "Honest, industrious, honorable, and cordially liked by his personal friends, he was by no means the paltry fellow that Dryden and Pope represented him to be. Johnson, in his brilliant memoir, treated him very unfairly, and clearly was annoyed that his conscience would not allow him to treat him worse." "A sincerely religious man, Blackmore was offended with the gross licentiousness of the drama and all those productions of the poets which constituted the light literature of the eighteenth century. To his eternal honor, Blackmore was the first man who had the courage to raise his voice against the evil, and give utterance to a manly indignation at the insults offered nightly in every theatre to public decency." "Blackmore made the fatal error of writing too much. His long poems wearied the patience of those who sympathized with his goodness of intention."

We have already spoken of Garth as poet and physician. The next most illustrious example of this union is found in the person of Mark Akenside, a man of "most excellent contradictory parts."

> "There were two Akensides—Akenside the poet, and Akenside the man; and of the man Akenside there were numerous subdivisions. Remarkable as a poet, he was even yet more noteworthy as a private individual in his extreme inconsistency." "Like Byron, he was lame, one of his legs being shorter than the other; and of this personal disfigurement he was even more sensitive than was the author of 'Childe Harold' of his deformity." "His father was a butcher of Newcastle-upon-Tyne, and one of his cleavers, falling from the shop-block, had irremediably injured the poet's foot when he was still a little child."

Akenside was three years at Edinburgh, a member of the Medical Society, and an industrious student; he then proceeded to Leyden, where he remained for some length of time and took his degree of doctor of physic, May 16, 1744. Although well versed in medicine and even advancing it somewhat in its scientific relations, he was never very successful in gaining clientage. As a poet he has won enduring fame by his "Pleasures of Imagination." As a medical writer he is favorably known by his treatise on dysentery.

To the names already given of physicians who were poets we should add those of Armstrong, author of "The Art of Health," Goldsmith, Smollet, Moore, the author of "Zeluco" and father of Sir John Moore, Aikin, Darwin, Mason Good, Wolcot, better known as Peter Pindar, Moir, and Crabbe. At home starts up in the minds of all Oliver Wendell Holmes, and less known, but of no mean merit, Percival.

Of pedagogues turned doctors, we read the names of John Bond, M.A., the learned commentator on Horace and Persius; next, of James Jurin, who from the position of a provincial schoolmaster raised himself to be regarded as first of the London physicians, and conspicuous among the philosophers of Europe. Why Arbuthnot is mentioned by Mr. Jeaffreson in this paper does not appear. Arbuthnot, the companion of Swift, the friend of Pope, and Parnell, and Garth, and Gay, and the life of the Kit-Kat Club; and last, and not least for his worldly prosperity, physician for some time to Queen Anne. To all this was the sad drawback, so common at that day, of habits of intemperance, and terrible suffering from asthma and melancholy.

We must not pass over in silence the chapter given to the lively and lucky and benevolent Quaker doctor, John Coakley Lettsom, by birth a West Indian, and for a time the pupil of Akenside the poet. He first began the practice of his profession in Tortola, where, during a residence of only five months, he earned the sum of £2000, ($10,000.)

> "Ambitious of achieving a high professional position, he returned to Europe, visited the medical schools of Paris and Edinburgh, took his degree of M.D. at Leyden on the 29th of June, 1769. He was admitted a licentiate of the Royal College of Physicians of London in the same year, and in 1770 was elected a fellow of the College of Antiquaries. From this period till his death, in 1815, (November 20th,) he was one of the most prominent figures in the scientific world of London."

Lettsom had no high reputation for professional acquirements, and was wanting in a good preliminary education, but yet his income was larger than that of any other physician at the same time; in some years his receipts were as much as £12,000 ($60,000) a year. Although he pocketed such large sums, half his labors were entirely gratuitous. To give the mere list of his benevolent services would be to write a book about them. His tastes were various and refined: he liked pictures and works of sculpture, and spent large sums upon them, and he disbursed a fortune in surrounding himself at Camberwell with plants from the tropics. Room is not given to us to insert here some of the incidents characteristic of his goodness of heart and large practical benevolence. Of his numerous works the one most known to the general reader is the "History of Some of the Effects of Hard Drinking." It concludes with a scale of Temperance and Intemperance, in imitation of a thermometer. The vices, diseases, and punishments of the different stages of intemperance follow in tabular order.

We must now bring our notice of Mr. Jeaffreson's attractive work to a close, leaving untouched his chapters on "A Few More Quacks," "St. John Long," "The Quarrels of Physicians" and "The Loves of Physicians," "Medical Buildings," and "The Country Medical Man," together with a *hors d'œuvre*, entitled "Number Eleven—A Hospital Story." Our readers who are intent on making additions to the store with which we have furnished them must draw from the "Book" itself,—and we would commend them for doing so.

ART. II.—*A Treatise on Fever; or Selections from a Course of Lectures on Fever.* Being part of a Course of Theory and Practice of Medicine, delivered by ROBERT D. LYONS, Physician to Jervis Street Hospital, Dublin, etc. etc. Philadelphia: Blanchard & Lea, 1861. 8vo., pp. 362.

DR. LYONS states in his preface that he was "induced to publish this work on Fever, with a view to bring within the reach of the student and junior practitioner, in a convenient form, the more recent results of inquiries into the pathology and therapeutics of this formidable class of diseases." With this preliminary statement we entered on an examination of the work, expecting some additions to our knowledge of fever. In this expectation we have been disappointed. We are unable to perceive that any new light has been shed on the pathological conditions embraced under this name; nor have we received any improved views respecting the management of the forms of fever which are treated of. We say this with a feeling of disappointment, for we were far from entering on a perusul of the book with a disposition to seek for its demerits, and it would have been much more agreeable to us to have arrived at a different conclusion. It is but fair to say that, before examining the treatise, our intention was to prepare an analytical review of it; but from the manner in which the subjects are handled this would be a difficult task, and we cannot consider that the work has claims to the space which an elaborate review would require. In justice both to the author and our readers, we are bound to give some of the grounds for the disappointment which we have experienced.

To the pathology of fever fourteen pages are devoted. The author enunciates the views of Virchow and his colleagues of the Berlin school, as embodying the doctrine most consistent with our present knowledge. These views are concisely set forth in the following extract:—

> "Fever, then, in the opinion of Virchow, essentially consists in an increase of temperature, which is caused by an increased consumption of organic material in the system, and appears to have its origin in certain changes in the nervous system. These changes may be considered to affect primarily the regulator or moderator functions of the nerves, and to be of a paralytic nature. It is probable that the vagi nerves, and we would add the sympathetic, are primarily if not chiefly engaged in the production of the febrile phenomena."

We do not find fault with the author for adopting these views, untenable as they certainly appear to us; but we do think he should at least have stated the views which are held by the majority of pathologists and practitioners at the present time; in other words, the humoral pathology of fever should not have been entirely ignored in a work designed for the student and junior practitioner. As the author does not discuss the subject, we shall not do so here; but we cannot pass by it without alluding to the evidence that "the fever-poison first invades the animal system through the channel of the nerves," which is afforded by a consciousness of the first impression of this poison on the nervous system. The author states that credible testimony to the reality of such an impression is not unfrequently met with, and declares that he was himself sensible of the time when he contracted typhus. We had thought that this fanciful notion was long since obsolete. To say that clinical observation is utterly opposed to the statement, would be gratuitous. Assuming it to be correct, the author was bound to offer some explanation of the fact, that after these primary impressions on the nervous system are made by fever-poisons, days, weeks, and even months may elapse before the morbid phenomena due to their action in the system become developed.

Dr. Lyons classifies fevers into *primary*, *irritative*, and *eruptive*. The primary fevers are the continued and the periodic—yellow fever being included among the latter. The eruptive fevers embrace small-pox, measles, scarlatina, and miliary or sweating fever. Erysipelatous fever does not find a place in either of the classes. Under the head of irritative fevers are enumerated gastric fever, gastro-intestinal remittent, and hectic. The latter, as the author states, "owe their existence to lesion of a well-defined kind in particular parts of the system, and are to be regarded as the constitutional expression of localized disease."

What the characters are which belong to gastric fever, and distinguish this from gastro-intestinal remittent, the reader is left to conjecture, for neither of the so-called irritative fevers is treated of. It is clear that any local inflammation, accompanied by febrile movement, might be included in the class of irritative fevers with as much propriety as the affections named. The author freely admits this when he says:—

> "A gastric or a hectic fever has, in fact, the same relation to the localized pathological process which causes it, as the pyrexial or febrile state attendant on ordinary local inflammation, whether of the viscera or external parts, bears to the physical disease which lights it up in the system."

Why, then, we may ask, have the three affections named been selected to compose a group styled irritative fevers, since, according to the author's own showing, they are not essentially fevers, but local affections?

The eruptive fevers are not considered, the author, in his preface, stating that he "thought it best to deal only with those forms of the disease which are of most practical importance." It is to be inferred that, in the author's opinion, the eruptive are inferior in importance to the continued fevers.

Periodical fevers—intermittent and remittent—are also excluded. The author contents himself with the consideration of yellow fever, which he places under the head of remittent fever. He gives as a reason for this, "that there is no ground for regarding it as a disease *sui generis*." Of course, then, it is neither more nor less than a variety of remittent fever. That this view has been entertained, and is still held by some, is not to be denied; but that it should be the deliberate opinion of one who has carefully studied the natural history of yellow fever, and the circumstances connected with its production and diffusion, so far as these are known, seems to us remarkable. We beg leave, with due respect, to commend to the author's perusal the learned work of Dr. La Roche, to which we observe not even a reference, in looking over the chapters devoted to yellow fever. To have written on yellow fever without making reference to the labors of La Roche, is, in itself, a fair subject for critical animadversion.

The larger portion of Dr. Lyons's work is devoted to the continued fevers. Thirty pages are occupied with the consideration of synocha or inflammatory fever. We confess ourselves to be one of those who had supposed this variety of fever to have been effectually eliminated from the nosology. We had hoped that these names had been consigned to the tomb of the Capulets. But here they are in a work designed for the student and junior practitioner. If either the student or junior practitioner can form a clear apprehension of the diagnostic characters of the variety of fever which the author thus designates, he has an advantage over us which we freely concede, and which certainly does not provoke any jealousy on our part. As varieties of synocha the author mentions synochus —another name which we had hoped was dead and buried. We have to thank the author for devoting to this variety but half a page. Relapsing fever he considers as another variety of synocha, and bestows upon its consideration six pages, without any allusion to the observations of Dr.

Jenner. He considers that in certain cases the primary seat of mischief is in the liver, notwithstanding he has distinguished this as one of the primary fevers, defining the latter to be fevers developed independently of any specific pathological lesion.

Under the head of typhous fevers, or typhosis, five forms of disease are included, viz.: 1. Typhus or camp-fever. 2. Typhoid or enteric. 3. "A state of the system in which, independently of the before-mentioned essential fevers, the pyrexial action which attends local diseases, such as bronchitis, pneumonia, and occasionally hepatitis, assumes all the characteristics of the low typhoid condition, with tendency to early sinking, collapse, and fatal issue." 4. The typhoid state supervening upon epidemic cholera. 5. The low typhoid condition following severe injuries, wounds, or surgical operations, and "upon such diseased processes as erysipelas, phlebitis, and purulent absorption." It would be an insinuation against the intelligence of our readers, which we do not care to indulge, to point out the nosological inconsistency of classing the third of these varieties with typhus and typhoid fever. The author, indeed, says they are not essential fevers. The same inconsistency, although somewhat less striking, applies to the fourth and fifth varieties. However, typhus and typhoid fevers are the only varieties treated of.

We could excuse, in a measure at least, the incongruities to which reference has been made in the foregoing remarks, if the reader were furnished with a clear and accurate account of typhus and typhoid fever. The work is deficient in this redeeming recommendation. The descriptive histories of these two forms of continued fever are vague, incomplete, and contain not a few palpable errors. That the author has seen cases of these two fevers in abundance is probable, but that he has observed them carefully by the bedside, and studied with attention the writings of Louis and other observers, the work does not afford intrinsic evidence.

It is not a matter of gratification to us to have formed such an opinion, but a due respect to candor and frankness requires us to say that, so far from regarding Dr. Lyons's work an important acquisition to our medical literature, it is calculated to confuse and embarrass the minds of those for whose benefit it was professedly prepared.

ART. III.—*The Transactions of the American Medical Association.* Instituted 1847. Vol. xiii. Philadelphia, 1860. 8vo., pp. 930.

THE annual volume of Transactions of the American Medical Association has an imposing character from its size alone. Thirteen years have elapsed since the first volume of these Transactions was published. They form now a valuable series, comprising much matter of a very superior character, relating to nearly every department of the medical sciences, and a number of ably drawn up reports on the subjects of medical education, and American medical literature, etc. It is true there are to be met with, amid the better portion of their contents, some crude essays which have little, if any positive value, while others also occur of a higher character, but destitute of that originality and research which we had a right to expect in the published transactions of an association which claims to include among its members some of the ablest minds among the medical men of the country. As a whole, however, these Transactions reflect no discredit upon the American medical profession. To judge them fairly, the many disadvantages must be taken into consideration under which the physicians of this country have heretofore labored, and the very inadequate field and opportunities that they have been able to command for close and extended observation in the directions best adapted to enlarge the boundaries of scientific and practical medicine.

Whatever, however, may be the judgment passed upon the thirteen volumes of Transactions that have been issued by the Association, viewed as a collection of papers, pathological, therapeutical, chirurgical, physiological, and hygienic, or as embracing a series of critical and educational reports—whether that judgment be favorable or otherwise—it must be recollected that they afford a very inadequate criterion of the actual workings of the Association, and of the amount of success which has attended its efforts for the attainment of the more important of the objects for which it was organized. They tell little or nothing of what it has done to elevate the character and standing of the American medical profession, for the enlargement and extension of medical education in our midst, and for the promotion of an original national medical literature. To determine how far it has been instrumental in the promotion of all or either of these objects, the condition of the profession at the present time must be contrasted with its condition when the Association came into existence. The increase that has taken place of late years in the facilities for medical instruction must be taken into consideration, together with the zeal exhibited by the student of to-day to avail himself of the new sources for the acquisition of professional knowledge placed within his reach. The few original works of any value in either of the departments of medicine, surgery, or obstetrics, by American authors, that were in existence even as late as 1848, must be compared with the many, and most of them of a very high character, which have been issued from the press within that period. Such a comparison will show that a manifest improvement has been gradually taking place for some years past in everything relating to the character, education, and skill of the members of the medical profession throughout the United States, and a very decided increase in the number and value of our native medical publications. How far this is fairly attributable to the agency of the American Medical Association may perhaps be questioned. Some may even be found who will insist that precisely the same thing would have occurred even had the Association never been called into existence, as a necessary consequence of the more general diffusion of education, the improvements that have taken place in the means and processes of instruction, and the greater activity of the human intellect in the pursuit of every species of knowledge, which is exhibited on all hands. Still, we think there can scarcely be a doubt that a powerful and most beneficial agency has been exercised by the Association in bringing about whatever of advance may be discovered to have taken place in medical education and literature in the country.

The thirteenth session of the Association, the proceedings of which are chronicled in the volume before us, was opened by a very sensible discourse from the retiring president, Dr. Henry Miller, of Kentucky.

After a notice of what had been done toward carrying out the instructions of the Association in regard to obtaining legislative enactments for the more effectual suppression of the crime of abortion, the discourse proceeds to a brief consideration of the history of medical education in the United States, of the broad line of distinction between the manner in which the education of the physician is conducted here and in Europe, the efforts that have been made for its improvement by the Association, and the impediments which have existed and still continue to exist to the carrying of the improvements proposed into successful operation. The views advanced by Dr. Miller are in the main sound, and his suggestions pertinent and judicious.

The first department of the volume before us—after the journal of proceedings—is that occupied by the section of Medical Topography, Epidemic Diseases, etc. It comprises two reports: the one on the Medical Topography and Epidemics of the State of New York, by Dr. Joseph B. Smith; the other on the Medical Topography and Epidemics of North Carolina, by Dr. James Dickson.

Both these reports are ably drawn up, and the contributions they present to the general fund of medical knowledge are highly respectable, and at the same time well digested and systematically arranged. The facts embodied in reports like these, collected by different observers, from different sources, in various localities, and among, to a very great extent, dissimilar classes of people, are well adapted to increase our acquaintance with the history—pathological and therapeutical—of the same class of diseases, according as they occur endemically, amid the different climatic, meteorological, local, domestic, and social conditions in which we find different communities to be placed; and the modifications, impressed through the agency of these different circumstances upon their character, march, and termination, enriching thus and in various other ways our acquaintance with general pathology and with prophylactic medicine.

The report of Dr. Smith skims over a very wide field of inquiry in respect more especially to the first department of its subject, presenting a view of the objects and purposes of medical topography, of the geography and hydrography of New York, and of the geological formations of the State, with the literature of the subject. The report contains a notice of the varieties and distribution of the ores, soils, and mineral springs of New York; of its floral districts and fauna, with the literary history of each subject; an account of the meteorology of the State, in respect to its several physical regions, illustrated by copious statistical tables. It presents, also, a brief notice of the ethnography of the State, embracing a sketch of the discovery of the Hudson River and territory; epochs of the history of the latter; character of its aborigines; its Dutch and Anglo-Saxon population; effects of the intermarriages of European immigrants into the United States since the Revolution; national character of the American people, etc. etc. The brief sketch of these several subjects, compressed as it is within the narrow compass of eighty-eight pages, is by no means devoid of interest and instruction. The whole of this department of the report is indeed drawn up with much skill and ability, and forms a very appropriate and useful introduction to the history of the epidemic diseases of New York, which forms the second department of Dr. Smith's report.

The epidemic diseases of the State are arranged by the doctor in *three* classes: 1st, contagious; 2d, infectious; and 3d, meteoratious. This arrangement is attended with the disadvantage of not being based solely upon either the causes or the characteristics of the diseases embraced in it, but partly upon both these circumstances. Small-pox, varioloid, varicella, measles, scarlatina, etc., it is very true, may be ranked as diseases which are propagated each by a specific poison emanating from the bodies of those who already labor under it. But it is very certain that all of these diseases occasionally originate also spontaneously; that as epidemics their wide-spread prevalence must be due to the influence of some peculiar meteoration or morbific constitution of the atmosphere; that in their character they are liable to an important modification, while their prevalence at particular places is promoted by circumstances of a strictly local character. Hence, when they occur epidemically, they may be placed in the third class with as much propriety as in the first. As infectious diseases, Dr. Smith includes such as owe their origin to koino-miasma, as the periodical fevers, with the yellow fever, and dysentery; to idio-miasma, as typhus and typhoid fevers, etc.; or to a combination of both miasmata, as the compound fevers. There is a large accumulation of facts which would seem very clearly to show that it is not from a simple malarious cause, whether this have a paludal, special, or domestic source, that we are to seek for the origin of the diseases belonging to Dr. Smith's class of infectious maladies, but that they are due to the presence of the same morbific meteoration to which the maladies included in his third class—influenza, typhoid pneumonia, diphtheria, erysipelas, and Asiatic cholera—are supposed to owe their origin. In no other manner can we satisfactorily account for the occurrence of the so-called infectious diseases, every year, at the same season, in certain neighborhoods or sections of country, for a long series of years, and then suddenly their disappearance, in part or altogether, from these places, while, after a longer or shorter period, they again make their appearance with probably increased severity, and having a wider spread than formerly; and this without any appreciable change in the conditions by which it might be supposed that koino- or idio-miasmata would be generated. The fact is, that a careful examination and accurate collation of a large mass of observations bearing upon the etiology of diseases, as well endemic as epidemic, which have been recently accumulated, would seem very clearly to indicate that, if they do not actually originate in certain thermometrical, hygrometrical, and barometrical conditions of the atmosphere, conjoined with, as an essential morbific element, a certain abnormal but as yet inappreciable change in its constitution, still by these conditions the sphere of their prevalence is increased, and the severity of their types respectively augmented; and to affections which ordinarily occur only sporadically, or as very limited endemics, are imparted an increased malignancy of character, and a strictly epidemic or wide-spread erratic prevalence.

The history given by Dr. Smith of the periodical fevers of New York may be consulted with profit, as may also his account of typhus and typhoid fevers, typhoid pneumonia, diphtheria, and erysipelas.

In the report of Dr. Dickson will be found a very excellent and full account of the bilious remittent fever of North Carolina, of typhoid fever and jaundice, and of pneumonia as it occurs in the latter State in its simple inflammatory and typhoid forms. The report contains also an interesting notice of cerebro-spinal meningitis as it prevailed epidemically in some parts of the State of New York during the years 1856 and 1857. Dr. Summerell, of Salisbury, describes a very unusual form of this affection observed by him. It commenced with nearly all the pathognomonic symptoms of what has been called the catarrhal fever of children, in its more severe form. These symptoms were followed in many cases by an erysipelatous eruption, more or less extensive, on some portion of the face, which eruption was always a favorable indication; while in other cases they were followed by bronchitis or pneumonia, when the disease assumed a more severe, but by no means unfavorable aspect. In other cases, again, the catarrhal symptoms were succeeded by those of cerebro-spinal meningitis, and these cases had in nearly every instance a fatal termination.

The proceedings of the Surgical Section are next in order. In these, three reports occur, namely, on the various Surgical Operations for the Relief of Defective Vision, by Dr. M. A. Pallen, of Missouri; on the Improvements in the Art and Science of Surgery in the last Fifty Years, by Dr. Joseph N. McDowell, of Missouri; and on Morbus Coxarius, or Hip Disease, by Dr. Lewis A. Sayre, of New York.

The first of these reports presents a very fair, if not an exhaustive review of what has been done by the surgeon for the removal of certain defects of vision, being supplementary to the report presented by Dr. Pallen at a former meeting of the Association. The present report is not, however, in our opinion, any more than was its predecessor, such a one as is best adapted to promote the objects of the Association, and give character to its transactions. Not because it is destitute, in a certain sense, of intrinsic value, but from its entire want of originality in any one particular. All that it contains of any importance may be found in standard systematic works on ophthalmic surgery, to which every oculist has or may have ready access. It was not, certainly, for the preparation and publication of mere compilations on any given subject, like that of Dr. Pallen, the Association was organized, but rather for the investigation of the various unsettled questions in respect to the different branches of medical, surgical, and obstetrical science and practice, by new series of observations and cautiously-conducted experiments.

The subject of the second report is one invested with a good deal of interest, and, were it handled with sufficient ability, might be rendered highly instructive. The Association has, certainly, not evinced much judgment in the choice of its expositor, on the present occasion, nor any great discrimination in admitting into the printed Transactions the report he has furnished of his labors. Dr. McDowell can scarcely be said to have presented either a full or faithful exposition of the actual improvements that have been effected in the science and art of surgery, during the last half century, with a notice of their relative importance; much less can he be credited with a fair and descriminative criticism of the several modes of practice, and modifications of apparatus and instruments which, within that period, have been brought forward by surgeons of eminence in Europe and the United States—their value being tested by the result of actual observations, and, so far as they can be obtained, well-authenticated and properly-digested statistics. Not only has Dr. McDowell signally failed in the accomplishment of the leading object of the inquiry submitted to him, but what he has communicated as his report is couched in language characterized by a want of proper dignity, as well as of the clearness and conciseness so essential in the discussion of all subjects of a scientific character.

The third report—on morbus coxarius or hip disease, its nature, causes, symptoms, march, and treatment—is a particularly able one. Its chief interest, independent of the accurate delineation of the disease and its accidents, consists — 1st. In the position assumed by Dr. Sayre, that the affection known as morbus coxarius is not always or generally the result of a strumous cachexia as is generally supposed, but that, in the great majority of cases, it is the consequence of accidental causes occurring in patients of a healthy, often robust constitution—the attenuation, anæmia, and vitiated nutrition exhibited by the patients in the progress of the disease being always consecutively developed simply as a result of the latter. 2dly. In the facts and arguments adduced to prove that the true cause of the shortening of the limb, in hip disease, is not an upward dislocation of the head of the femur, but a destruction of the latter, and an enlargement of the acetabulum from caries. 3dly. The suggestions as to the advantages which will result from a removal of the morbid effusion, either by puncture or subcutaneous incision of the articular capsule, by which, during the second stage of the disease, the cavity of the hip-joint is distended, and the irritation of the part enhanced and prolonged. 4thly. In the proposal made to excise the diseased portions of the head of the femur so soon as caries has been positively made out to exist in it. We have to regret that the restricted space allotted for this review will not permit of our attempting an analysis of Dr. Sayre's report.

We come next to the proceedings of the Section of Practical Medicine and Obstetrics, embracing a report on the Influence of Alcoholic Drinks in the Development and Progress of Pulmonary Tuberculosis, by Dr. N. S. Davis, of Illinois; another on the Education of Imbecile and Idiotic Children, by Dr. H. P. Ayres, of Indiana; and a third on Inebriate Asylums, by Dr. C. McDermot, of Ohio.

Of the report of Dr. Davis, we can afford room only for the general deductions which he has drawn from the facts, experiments, and clinical observations that have come under his notice. In support of the correctness, generally speaking, of these deductions, we may remark, a much more extended series of statistics than those referred to in the report could be adduced. The deductions of Dr. Davis are as follows:—

> "1st. That the development of tubercular diseases is facilitated by all those agents and influences, whether climatic or hygienic, which directly or indirectly impair or retard the metamorphosis of the organized structures, and the efficiency of the excretory functions.
>
> "2d. That observation and carefully-devised experiments both show that the presence of alcohol in the human subject, notwithstanding its temporary exhilaration of the cerebral functions, positively retards both metamorphosis and elimination.
>
> "3d. That neither the action of alcoholic stimulants on the functions of the human body nor the actual results of experience furnish any evidence that these stimulants are capable of either preventing or retarding the development of tubercular phthisis."

The report on the education of the imbecile and idiotic is one of considerable length. The author of it has collected and arranged with considerable industry the leading facts that have been thus far elicited in respect to the general character of idiocy, its classification and degrees; the number and condition of idiots in the United States; the causes of mental imbecility, and the susceptibility of those afflicted with it in any of its forms to the influence of education; with a general summary of the results that have been already made to elevate these unfortunates to the rank of useful members of society, so far, at least, as can be done by rendering them competent to minister to their own support, and at the same time enhancing, as far as possible, their capacity for and sources of happiness. The report closes with a short notice of cretinism—a subject of the deepest interest to the philanthropist, and one having a very close connection with that of idiocy.

In the presentation of so able a digest of what is at present known in reference to the education of the different classes of idiotic children, Dr. Ayres has performed a timely and acceptable task. The subject is one which is now claiming the attention of philanthropists in all portions of the civilized world. The attempt to carry it out to any permanently useful results can be accomplished only by rendering more exact our acquaintance with the true nature and causes of idiocy in its various grades, and the extent to which those laboring under either of these grades are susceptible of physical, moral, and intellectual improvement by the application of proper educational means. It is the members of the medical profession who are looked to, most confidently, for effective assistance in facilitating the means adapted for the amelioration of the condition of the idiots of our country—a labor which, for its accomplishment, appeals to them as philanthropists, as investigators of the physiology and philosophy of mind, and as the legitimate curators of man's mental as well as of his physical infirmities and diseases.

The report of Dr. McDermot treats of another effort of man for the benefit of his fellow-creatures, having its birth in our own times—times so fruitful in every enterprise which has for its object the relief of human maladies, be they moral or physical. Habitual intemperance being no longer viewed as a persistent, voluntary use to excess of intoxicating drinks—a use which the unfortunate inebriate has it in his power, with but little effort, at any moment to relinquish—but recognized as an actual disease, constitutional and hereditary, a proper direction has been given to the attempts made to solve the important question of the means best adapted for the effectual and permanent cure of the malady. All experience has shown that so long as the patient is allowed unrestrained intercourse with society, and, in this manner, is exposed to the temptations to partake of intoxicating drinks by which he will necessarily be surrounded on all sides and continually, the suppression of his habits of intemperance will be attended with an amount of difficulty which too often can scarcely if at all be overcome. Hence, it becomes evident that for the recovery of inebriates an asylum is as necessary as it is for the restoration of the insane; where they can be guarded from the possibility of indulging the morbid appetite for alcoholic stimulants, while they are, at the same time, subjected to such medicinal and moral treatment as shall be adapted to overcome that appetite, administered under the direction and supervisorship of a proper medical officer. To urge the importance of such an asylum, and briefly sketch the benefits which the asylums for inebriates already in existence have produced, is the subject of the report of Dr. McDermot. It is one which will amply repay the time spent in its perusal.

The remaining reports contained in the present volume of Transactions are one from the standing committee of Medical Education, presented by its chairman, Dr. D. Meredith Reese, of New York; another from the committee on American Medical Literature, by Dr. D. E. Wright, of Tennessee; and a third on American Medical Necrology, by Dr. C. C. Cox, of Maryland.

If it were possible to accomplish the reform in the professional education of those who in this country would assume the office of physician by simply a series of annual reports, it is very certain that the American Medical Association, long before now, would have been able to rest from one, at least, of the important tasks assigned it. All must admit that it has labored well and assiduously to indicate the changes necessary in the schemes, periods, and means of instruction pursued in our medical schools, in order to render such instruction adapted to prepare fully their pupils for the discharge of the duties that will devolve upon them on their entrance into the medical profession. Nor can it be denied that the Association has, with commendable zeal, urged upon the several faculties having the instruction of medical pupils in charge, the adoption of the means alluded to.

That the series of very able reports on medical education presented to the National Association, and published in its Transactions, have been productive of good will not, we believe, be called into question. The force of the facts and arguments presented in them have had, it is very clear, we think, a very decided influence in the improvement of medical education in our midst, but not, unfortunately, to the extent that could be desired.

In the present volume of Transactions, in addition to the report of Dr. Reese, of New York, there is another on the same subject; that, namely, of the committee appointed to confer with the teachers of our medical schools, presented by Dr. Thomas W. Blatchford.

By the first of these reports it is made an indispensable requisite to the reception of any one as a student of medicine, that he shall be at least seventeen years of age, of good moral character, possessed of a good English education, shall be able to read and translate the Latin language, and have an elementary knowledge of Greek. His qualifications to be tested by actual examination. It requires, in all, *four* years of study, including attendance upon lectures: the fourth year to be devoted mainly to clinical hospital instruction, in medicine, surgery, and obstetrics. It requires attendance upon *three* complete courses of lectures in a recognized school. Candidates to be admitted to examination after *three* full years of instruction in all the branches which are required to be taught, excepting clinical medicine. It extends the lecture term through the full period of *nine* months in each year — the term to be divided into *two* parts or sessions, the first being chiefly occupied with instruction in the *elementary* branches; the second, in the practical and more advanced branches. The pupils of the first session to constitute the *junior*, and those of the second session the *senior* class. Not more than *four* lectures to be attended daily by either of these classes; each lecture being preceded by a recapitulary series of examinations upon the subjects of the lecture of the preceding day. The number of teachers in each school to be increased in accordance with the large increase in the number of branches required to be taught. It demands the same examination previously to admission into the senior as into the junior class—the examination for the promotion of a junior to have reference both to the fullness of his preliminary education, and the amount of his improvement in the branches taught in the primary session: admission into the senior class to be predicated upon the satisfactory result of the examination. A similar examination is appointed at the commencement of each session to test the improvement made during the preceding term. The final examination for graduation to be of each candidate separately before the entire faculty, and of commissioners appointed by the medical society of the State in which the school is located—a certificate of approval from the latter being required before the degree can be conferred. No candidate to be admitted to examination before the expiration of the regular lecture term. No school to be recognized which has not access, for the clinical instruction of its pupils, to a hospital containing at least *eighty* beds. The so-called "college clinics" are denounced as inadequate for clinical instruction. The titles of the several chairs in a school to indicate the actual branch or branches taught by each.

The foregoing suggestions are in the main judicious and practicable. The result of their inauguration as the basis of an improved and more extended system of medical education in this country would, we are well persuaded, be in the highest degree beneficial.

The report of the committee of conference lays down, as the foundation of a proper reform in medical education, the following propositions:—

1st. A term of study for each candidate for the doctorate for the full and entire period of *three* years, under the direction of a recognized practitioner, and a *bona fide* attendance during two terms, in different years, upon full courses of lectures delivered in a medical school recognized as one regularly organized by the Association. 2d. A permanent record to be kept, containing the signature of each matriculant, with his age, the time he commenced the study of medicine, and with whom, also the full description of any evidence of previous education he may possess. 3d. The necessity of hospital clinical instruction as an essential part of medical education; upon this, each candidate for graduation must have attended regularly for at least *four* months. 4th. The attendance upon the examination of all candidates for the doctorate of delegates from the medical society of the State, the favorable vote of whom shall be necessary to the graduation of such candidates. 5th. No medical school to be recognized as regularly organized unless represented at a meeting of the Convention of Medical Teachers, etc., or which does not comply with the regulations and recommendations of the American Medical Association. 6th. Evidence of suitable preliminary education to be positively required from all matriculants into medical schools. A final recommendation of the report is, that every proper effort be employed to call the attention of individuals, as well as legislative bodies, to the importance of endowments, whether of medical colleges or their respective professorships.

The whole of the suggestions and propositions made by the two committees above referred to were, we believe, unanimously adopted by the Association. In their general features the recommendations of both committees correspond; the difference between them is in details only, and these mostly of secondary importance. We shall wait patiently to see how far they will be carried out in good faith by the faculties of our medical colleges, and a compliance with them insisted upon by the profession generally. In respect to the good that would result from their faithful execution upon the part of all concerned there cannot, we think, be the most trifling dispute.

The report of Dr. Wright on Medical Literature is, to say the least of it, a very sensible document. It attempts, and it appears to us with success, to prove that there has arisen of late years an increased demand for original professional works by American writers, and a consequent increase in the supply. During the last two or three years it appears that a very nearly equal number of new American and English works, in different departments of medicine, have made their appearance in the United States; while during the six months immediately preceding the date of the report before us the new works on medicine by American writers outbalance the republication of foreign medical works in number, while they present a character for intrinsic value that will scarcely lose anything when compared with their competitors from abroad. It is shown that in this country the demand is almost exclusively for works in which the facts, observations, and improvements, the raw materials, so to speak, which have been developed and fashioned by the members of the medical profession generally, at home and abroad, are collected and arranged so that their practical application, in the correction of received theories or in modifying the prevailing system of therapeutics, is presented to the reader for immediate use. Strictly original monographs in either of the departments of medical science or practice have but few readers among us, and perhaps as few producers. There are, indeed, in the United States, but a small number of medical men who have either the inclination or the time, even if they have the capacity and the means, to engage in the search after new truths in medicine, or by a long series of careful observations, through fields of sufficiently extended limits, to develop improved and more certain plans for the treatment of any particular malady or of disease generally. Our medical teachers are most usefully occupied in indoctrinating their pupils into the principles of medical science and practice as they now exist: inculcating such of the prevailing doctrines as to them seem most correct, and perfecting the therapeutic directions laid down by the professional authorities of the day, from the teachings of their own experience as private practitioners, or perchance as chief of some large general hospital. Their teaching must be chiefly elementary—theirs is not the task of some distinguished professors abroad, to discuss new views and new developments of scientific questions before an audience of scientific men. Our medical writers, also, when they attempt anything beyond an essay for a professional journal, or a report to their county or State society, restrict their efforts mainly to the preparation of a systematic treatise on medicine, surgery, or obstetrics, more or less comprehensive; in the preparation of which they employ materials furnished, not by their own, but by the labors of others: systematizing and utilitizing professional knowledge already existing in detached parts, for the benefit of the less industrious members of the medical community, as well as of such as have not the leisure to consult, even if they have access to the sources from whence that knowledge is to be derived. Direct practical utility is almost the only criterion of excellence in medical literature in this country, and the professional books which are the most in demand are either those which offer, on the emergency, prompt practical counsel to the physician, or which can be used as text-books in facilitating the acquisition of sufficient knowledge to secure a doctor's diploma. For monographs of original research on abstruse topics which cannot be reduced at once to a positively practical application, the American medical profession supplies few, if any readers, and such will continue to be the case until a body of medical men shall arise in our midst willing to devote their time and talents solely to the cultivation and advancement of medicine and its collateral sciences, as important branches of liberal science, equally interesting from simply the truths they embrace, as for the benefits they are adapted to confer upon the human family.

The report on Medical Necrology presents brief notices of some of the more prominent physicians who have died within the last few years. We are thankful for the meagre details furnished by Dr. Cox, while we could have desired more full notices of the lives and labors of more than one of the recently departed, who by their moral worth adorned their profession, and by their labor extended materially its bounds.

ART. IV.—*Commentary on the Hindu System of Medicine.* By T. A. WISE, M.D., Member of the Royal College of Surgeons, and of the Royal Medical and Chirurgical Society; Corresponding Member of the Zoological Society of London, and of the Philomathic Society of Paris; Bengal Medical Service. New Issue. London: Trübner & Co., 1860.

A WORK of this kind at first impresses us as a mere matter of curiosity, like some strange volume of travels; and the deepest emotion expected from its perusal is, perhaps, one of a scornful superiority, as seeing and feeling our vast advantages in enlightenment, in the inheritance which has devolved to us from a classic antiquity, and in the researches of modern science; and of an insulting pity toward the alleged half-civilized races whose records we are exploring.

Yet an account of Hindu medicine may be contemplated in other points of view. As a collateral light to the history of our science, a history, alas! too little studied in America, it is well worthy of the perusal of the practitioner who is not utterly broken down by labor, and incapacitated for extensive reading. Nor are such collections without their direct contributions to Europeo-American science: witness the Japanese discovery of acupuncturation. Without further parley, then, we bespeak for the volume before us great interest, arising from curiosity, from occasion to contemplate known facts in a new point of view, and from the hope of solid additions to our knowledge.

The American people, deeply penetrated as they are with the idea of perpetual progress, of the great superiority of this age, and of their own position, as being far in advance and setting an example, have nevertheless not shown themselves wanting in interest for the history of a high antiquity. The general and deep attention given by every class among us to the labors of Gliddon and Dr. Nott, as evinced by the great number of large classes, and the rapid sale of an expensive quarto, have surprised many; especially when they reflected that almost the only introduction to the subject, familiar to the great mass and acting as a source of interest, was the illustrations which these labors threw upon the Book of Genesis, and a few allusions and statements in Kings and the Prophets. To have presented to us a treasure full of the records and wisdom of "them of old time," drawn, most of it, from sources older than Moses, and discarding the more recent antiquity of Greece, to hold communion with the coevals of Zoroaster, and perhaps of Nimrod; to see sketched out a whole system of medicine from a departed world, and to hear the advice of men of the ages when God conversed with mortals face to face—to do this in regard to the manners and duties of a physician—such an opportunity might well offer grounds of independent attraction to Americans and to members of a learned profession.

Dr. Wise was in the service of the British East India Company, at Dacca, in the province of Bengal, British India; a large city which had been the capital, an honor now held by the new and immense Calcutta. Dacca lies between the Ganges and Brahmapootra, on a branch of the former, not far from the sea; in a *jungly* or forest marshy district, with much space having resemblance to our cane-brakes; and one which had long been under the concentrated influence of British power and proximity. These circumstances may have had some influence on his opinions.

His attention had been drawn, for many years, to the medical Shastras, or primeval religious medical works of India; which he found, in his neighborhood, to be in a state of slow decay from foreign influence, and which he much feared would soon be entirely lost. He made large translations of them from the extinct Sanscrit language, but soon found that he was grappling with a whole literature far beyond his leisure; and finally concluded to prepare and publish the present abstract.

According to his account, medical Sanscrit learning has fared much worse than the legal, mythological, philosophical, and historical productions of the same most ancient and wonderful school. Sir William Jones, amid all his fame, unequivocally denied the existence of any such science; (p. iv.,) and Mills, the historian, has imitated him. The only authors whom Dr. Wise cites as having shown their knowledge of its existence by writing on it, are as follows: Professor Wilson, in the Calcutta Transactions, and in the Oriental Magazine; Mr. A. Soma de Köros, of Hungary, in the Journal of the Calcutta Asiatic Society, in 1855; Dr. Hayne, in Tracts on India; Dr. Ainslie, in his copious work on the Indian Materia Medica; and Dr. Royle, in an essay on the Antiquity of Hindu Medicine, in 1838, and in able courses of lectures. We have not before us any of the productions of the continental press, although we know that such exist, learned, copious, judicious, and profound.

Yet it would appear that Mr. de Köros found extensive translations of the medical scriptures of the Hindus, into the language of Thibet, a country of which we hear so little. The Brahmins claim all the rank, confidence, and development to be derived from an antiquity of 3101 years before the Christian era; and the earliest collateral accounts ascribe to them the possession of all the estimation which they claim. Even the presumptuous Greeks, the Young America of that distant age, after the expedition of Alexander, treat the naked wise men, the gymnosophists of India, with deference and respect; and the treatises now extant, although become scarce, and, in Dr. Wise's part of India, extremely difficult of access, and generally preserved as conferring exclusive family privileges, are described as being most copious, dignified, and extensive. The Anglo-Saxons, like the other conquerors of India, and like most conquerors everywhere, have in general treated the fame, literature, and science of the vanquished with contempt and neglect. One of our townsmen, a few years ago, excited some laughter by expressing the hope, at a coming period, "to triumph over the archives of despotic Britain;" and the Hindu "archives" appear to have been the subjects of a pretty effective triumph. Not much wiser than their Tartar or Persian predecessors, and less wise than Alexander's Greeks, they have left a state of things which deceived Sir William Jones, and seems to have aimed at the oblivion of a whole mass of learning, of mighty departed empires, and of a whole age of this world. Later years have in part made up for this criminal negligence; but we are bound to acknowledge that but a portion of this retribution has come from the race of Odin. Splendid establishments have certainly been instituted by the East India Company; but excepting the writings of Sir William Jones, M. Silvestre de Sacy, and one or two other French, the great mass has been contributed by Germans. How hard that so little of this should have been done for medicine!

Our readers are, no doubt, too familiar with the character of what are called analytical reviews, when dealing with works of a copious and solid character, to expect anything approaching to a full abstract of their contents. Such a memoir is rarely possible within the space allowed, and when actually not impracticable, requires an expenditure of time and labor beyond what is ever allowed to journalists. We have looked over Dr. Wise's book, and will proceed to notice what strikes us as most likely to interest American physicians. As it will possess some convenience, perhaps we shall be allowed the privilege of using italic headings.

Spelling and Pronunciation.—The proper spelling of Sanscrit and other oriental words in English letters has formed a problem of much difficulty. The German mode, used much by comparative philologists, appears not to be in use among popular or general English writers; and the spellings in our use have generally been chosen by the various officers of the East India Company, who have frequently taken them by the ear, without any extended study. We have no other guide within our power, for the present article, than our author himself, whose directions we copy, as follows:—

"The consonants to be pronounced as in English.

"The vowels as in the Italian language. The long vowels will be distinguished by the following marks:—

á is to be sounded like *a* in papa.
a " " " *ay* in say.
í " " " *ee* in see.
o " " " *o* in so.
u " " " *oo* in too."

We add, on the authority of oriental residents, that in *bh*, *kh*, and *gh*, the *h* must be separately pronounced after the preceding letter—these characters not expressing *v*, the Greek χ, or soft γ. Thus, *Bh* conveys a sound somewhat resembling that used in the popular and comic expression, B'hoys; Khan, the familiar Tartar name for king, might be expressed K'han; and Ghaut, G'haut. For ourselves, we decline all opinion on these sounds.

The sacred Védas, as they first issued from the four mouths of Brahma, the awful Creator of all material things, were intended for instruction in the primitive age of the world, and contained all that was necessary for that period of innocence and purity. In the second age, one-third of the human race became depraved; and in the third, one-half of those who were then in existence. In the present degenerate period, the fourth age of Brahma's creation, and which has endured only 4960 years, besides other terrible marks of retribution from the gods for the crimes and impiety of our race, life is shortened to 100 years, and embittered with disease, which, in its various forms, was unknown to the primitive creation. It was then that Brahma, in pity to mankind, dictated to them additional Védas, for their instruction and comfort in their new and corrupted state. These are to be distinguished by the name of Upavédas; and among them, the Ayur-Véda contained all that was necessary for the preservation and restoration of health. Time, climate, and the crimes of men have done their work upon this heavenly gift, and all that we have left is composed of fragments preserved by commentators.

> "Yet part no injuries of Heav'n could feel;
> Like crystal, faithful to the graving steel—
> Secure from flames, from envy's fiercer rage,
> Destructive war, and all-involving age—
> Their names, inscribed unnumbered ages past,
> From Time's first birth, with Time itself shall last;
> These, ever new, nor subject to decays,
> Spread, and grow brighter with the length of days."

Eight treatises composed the first part of the divine original, and treated respectively of general surgery, of that of the face, head, and neck; of general diseases; of derangement of the intellect from the anger of the gods, or from demoniacal possession; of the diseases of children; of poisons; of the restoration of youth, beauty, and happiness; of alchemy; and of sexual weaknesses. The second Ayur-Véda treated of anatomy and dissection; of the causes of disease; of the preservation of health; and of a selection of remedies. The first physician, the individual to whom this revelation was vouchsafed, was Dakhsa, the Prajahpati, because he was an ocean of wisdom. His pupils, principally the "Ash-win" family, performed cures now considered miraculous; they healed the wounded of the battle between the gods and the giants, and replaced the fifth head of Brahma himself, after it had been cut off. Their success in curing paralysis induced the god Indra to study medicine.

After this, mankind became divided into sects; and precisely the same results ensued which are now visible from that cause in the United States of America. Men became ignorant, restless, unhappy, and afflicted with many painful and dangerous diseases in consequence. This is as should be expected; but what is odd, is, that a very modern-sounding step was adopted to relieve these evils. This was no other than a meeting of learned men of India, held by appointment in the Himalaya Mountains. The names of these medical philosophers, the "Rishis," are all given; but however deserving of glory they certainly were, we shall spare our readers the enumeration, notwithstanding our lesson in Sanscrit pronunciation. The names prove their extreme antiquity by having no Sanscrit etymology, and by their being replaced with a duplicate set, derived from the subsequently constituted Pantheon of the Hindus. We have not space, nor do we presume our readers have patience or curiosity, for the long names of the great physicians of this age of demigods.

Charaka, the historian of these occurrences, has, it is said, left a work "of the highest rank;" which certainly wants exact anatomical and pathological knowledge, and is often obscure. Simple remedies are described in it, with combinations of them, which do not reach the extravagant intricacy visible in those of some more modern volumes. His work, and that of Susruta, to be next mentioned, are actually the groundwork of the more recent medical systems; and these latter frequently display more imperfect descriptions than those of their celebrated masters, from ignorance of anatomy and etiology.

The next great name now frequently cited, is not exactly that of a demigod, but of a god, descended upon earth. When the ocean was churned by the gods, vatnas, or precious gifts to men, were produced; and among these was the divine Dhanwantari. This deity was instructed in the Ayur-Véda by the thousand-eyed Indra, "practiced medicine with great success in heaven, and became celebrated there." It seems unreasonable to us that the gods should suffer by disease, in consequence of the crimes of men. Dhanwantari descended upon earth, out of pity for mankind; became king of Benarès, and taught hygiene and medicine, by lectures, on earth; a rank, for a professor of medicine, somewhat higher than that of either Hippocrates or even King Thoth. Dhanwantari was petitioned by the association of Rishis to communicate his knowledge to Susruta; and the latter, under the dictation of his divine master, prepared an abridgment of the Ayur-Véda for human use; and this is the work to which we have already alluded as one of the two great classics of modern Hindu medicine.

The sacred Rishis were succeeded by other Munis, (sages,) and finally, under the institutes of Menu, the caste of Vaidyas was set apart for practitioners. Brahmins were permitted to study medicine for their instruction, Khetriyas for their own health, but nobody but a Vaidya was suffered to do it for his pecuniary support. The work of Charaka is considered the better for medicine, and that of Susruta for surgery and anatomy. The favorite compilation is that of Baboprukasa, who lived about three hundred years ago.

After all this mythological narrative, which is a mere sketch of Dr. Wise's more detailed history, we may try whether we can find anything like what mortals of these degenerate days call "common sense," amid the preceding instructions of the gods.

Teachers of Medicine.—Menu describes a very high character, indeed, for what a professor ought to be, both as regards learning, industry, morals, manners, and self-devotion. He must not be mercenary, but content with the honor and merit of bestowing knowledge. In many cases he receives no emolument, but may accept an allowance from the rich.

Students.—In all cases the student should be of a respectable and ancient family, and son of a practitioner, or of one who respects the medical profession. He should be inquisitive and observant; not covetous, zealous, or lazy; be a philanthropist, generous, and of an amiable and happy disposition. He should be active in his duties, and not fatigued by his studies; and possess gravity, a good memory, acute senses, and considerable acquirements. The teacher of such good students, after death, may expect to go to the heaven of Indra.

The progress of the student must be at first slow, commencing with the nomenclature, then acquiring single subjects, and lastly the whole system. The Shastras are not to be read on unlucky days; with numerous additions to the common list of such. After well completing his studies, and acting for himself, he must receive the permission of the Rajah to practice medicine.

Physicians.—The physician should possess a healthy body; he should keep his nails and beard short, his body pure, and clothes clean, and wear shoes and a small turban. He should carry an umbrella and a stick. He should possess a good memory, and be always amiable, cheerful, and collected. His language should be mild, candid, and encouraging, rather like that of a friend than of an acquaintance; and he should be always ready to assist the sick. He should possess a character for strict veracity, a calm temper, and the greatest sobriety and charity, and be a man of sense and benevolence. The patient should never be afraid of his physician.

Without the union of both theory and practice, his usefulness will be no better than the progress of a bird with one wing or a chariot with one wheel.

> "Without a knowledge of books, he will be confused, like a soldier afraid in time of action, will be a great sinner, and should be capitally punished by the Rajah. On the other hand, a want of practical knowledge will impede his advancement; and his senses will be bewildered when he is called on to treat acute diseases. Such a physician will not be esteemed by the great, as he cannot practice with success when only instructed in half his duty."
>
> "Some practitioners have many instruments and medicines which they do not know how to use. Such are calculated to deceive, and by their arrogant manners, and being without a knowledge of the Shastras, are enemies to mankind; and are called Chhadmachara. Those who possess the favorable qualities of physicians, without the necessary knowledge, are called Pratirápaka. The first two are sometimes allowed to practice by the neglect of the Rajah; and they may be known by their vanity and ill will toward the good physician. Such persons flatter the patient's friends, are diligent, take reduced fees, are hesitating and doubtful in performing difficult operations, and pretend that their bad success is caused by the bad attendants, etc. Such persons avoid the society of learned persons as they would a jungle." "Still some patients will be saved when under the care of such a physician."

There is much more of these "Medical Ethics;" some calculated to make us wish that Dhanwantari was more listened to than he would seem now to be in America. Thus of the

> "*Messenger and Attendants.*—The person who is sent for the physician should not be of low caste, a fool, one of questionable veracity, or a great sinner. He should not appear before the physician distressed from fatigue, or by a rapid journey; or apparently fearful of the result of the sick person's ailment."

Of Dr. Wise's volume, fifty-three pages are devoted to anatomy and physiology, about thirty-two to descriptive anatomy, a few pages to the elements of which the body is composed, and the remainder is on therapeutic science, with its references to religion. One is fatigued with wonder in looking over such a volume, so strange to modern eyes appears this mixture of science, hypothesis, and mythology. The anatomical details appear wonderfully crude and wild; and yet they give evidence which cannot well be resisted that some who contributed to them had seen bodies opened, as well as had much surgical experience and some medical. The law which pronounces a Brahmin unclean if he touch a dead body, does not, according to Charaka and Susruta, render examinations of the corpse improper. A number of directions are given; and the body must be rendered putrid and scraped apart, instead of using the edge of the knife.

Brahmins can be purified after the unhallowed touch; and to a Vaidya, or one of the medical caste, if the rules of the sacred books are complied with, it is not unlawful.

A catalogue of vital parts, which it is peculiarly dangerous to wound, is given by Susruta; and here, with strange omissions, we still see the results of experience. Wounds near the great toe are apt to produce tetanus; those of the palm of the hand, hemorrhagy so severe as to require amputation of the arm. Depressed fragments of the skull are to be elevated or removed. Wounds of the upper part of the foot produce unsteadiness in walking; those of the ankle-joint, stiffness and lameness; in the middle of the thigh, fatal hemorrhage; just below the groin, great hemorrhage and paralysis of the limb; in the side of the os sacrum, paralysis; in the axilla, copious discharges of blood and pus, followed by death; in either side of the neck, death. The blood-vessels originate from the navel, as in the fœtus. Of the connective cellular membrane a description is given, which is almost accurate; of other parts, a mixture of striking truth with fanciful additions, which we will not occupy space in copying.

There are five elements: earth, water, air, fire, and ether. These constitute vegetable and animal bodies, by their combinations. The three principal humors are air, bile, and phlegm. From these are produced seven principal temperaments; three by the predominance of the three humors, three more by the influence of three pairs of them, and one by all three. Other and secondary temperaments, something like what the savages of these degenerate days have called idiosyncrasies, exist by the introduction of the qualities of various gods into the constitution of man; and another set, again, by those of animals, and even demons. An article on generation approximates very remarkably to the truth; and we have part of this on the authority of Siva himself. Very similar is the article on growth and the progress of life. If the ancient writings be not desultory, and deficient in strict arrangement, the fault must be with Dr. Wise; for his abridgment is certainly liable to that objection. Under Growth, we have a notice on Sleep, which we should have thought more appropriate to hygiene or physiology. Sleep during the day should always be avoided, and is a sin, except during excessive heat. "But children and old people, and those who have indulged in an excess of venery, who have consumption, drink much, or are much fatigued by traveling or other exercises, or those who are very hungry, or labor under indigestion, may sleep an hour (forty-eight minutes) in the daytime. If a person do not sleep during the night, he may take half the quantity of sleep during the day." Next follow accounts of the true nature of dreaming, drowsiness, yawning, languor, laziness, nausea, fainting, and swoon-ing, and an article on digestion. Amid the detail of anatomy, there is a chapter on the excretions. After temperament, comes a chapter on ages and death. Natural death takes place at the end of one hundred years; and accidental death can be guarded against by care, medicine, and prayers. The pleasures of the senses mislead us to our death; therefore the wise should keep them under control. The holy man is the most indifferent to death, because he is the best prepared for it.

Death is only separation of the soul, and passage of the body to the five elements. Bodies are burned to prevent the defilement of these matters by interment in the earth. We should not regret the death of relatives and friends if they have passed through life with propriety: our grief is the offspring of our ignorance and selfishness. The transmigration of the soul is immediate; the liberated soul uniting itself at once with the seed of another being, and this of necessity.

> "Beatitude is to be obtained by the coercion of the members, by abstaining from hurting or afflicting, or giving pain to sentient creatures; when the individual becomes fit for immortality." (Menu, 860.) "When the vital soul has been purified by the good deeds which have occurred in the body, it is absorbed into that supreme essence, the divine soul of all beings; which withdraws his energy; and placidly slumbers." "Let him not wish for death, let him not wish for life; let him expect his appointed time as a hired servant expects his wages. (Chap. vi., § 45, page 178.)"

About thirty-one pages are occupied with hygiene; and this part of the work is well worthy of the perusal of any man. The climate of our Louisiana resembles that of Bengal, in its combination of heat and dampness; and much of the surface of the United States partakes of the varied character of many parts of India. To this, it will be recollected, we are to add the actual living execution of the rules of ancient philosophers of whom we have read in books, perhaps most through the school of Pythagoras. We have, first, an account of the climates of the different parts of India, the hours of bathing and anointing, exercise and shampooing, clothing, the umbrella, the construction of houses, and diet. The articles of food are extremely diversified; and a large amount of animal nourishment is consumed. Sugar is strongly recommended as wholesome: a variety of oils are used, and largely for inunction.

> *Water.*—"The Hindus were very careful about their drinking water, and ascribed the appearance of many diseases to bad water. They considered the water of wells, or natural springs in the sandy beds of rivers, as the most wholesome, as they promote digestion and strength. The river and fountain water at the bottom of high hills was considered less wholesome; and the most unhealthy was considered to be the water from brooks, and from tanks and reservoirs. This water was supposed to produce indigestions, obstructions, and lethargy, with a predisposition to fever."

Rain water, when clean, was considered beneficial to health.

Various *condiments* are used, many of them extremely hot.

The grape is considered cooling and aperient. Wine is made in the northern provinces; but in the southern, the heat forbids the necessary modification of the fermentation, the process being too rapid. In the Véda the use of wine and spirits is forbidden; but in the Tantra they are allowed, and the followers of Siva indulge in their use.

Early hours are universal, and the higher classes of Hindus are extremely strict in the performance of all their religious ceremonies.

To *Materia Medica*, forty-three pages of our author are devoted. This part of our subject is more known to physicians of the Western world. India has been investigated throughout by the ablest botanists; many of our most valuable drugs are brought from that region, and Dr. Ainslie's Materia Medica Indica has furnished a comprehensive account of them, with elaborate investigations. This review is not the place to pursue studies of the kind. Of plants familiar to us in the United States, we notice the following genera: pinus, betula, sida, bignonia, menispermum, ricinus, asparagus, asclepias, pothos, gossypium, hordeum, piper, hedysarum, anethum, datura, cannabis, andropogon, solanum, cupressus, vitex, cassia, saccharum, vallisneria, nymphea, panicum, ficus. All these are for diseases arising from excessive air, phlegm or bile. Emetics are obtained from the genera andropogon, sinapi, cassia, hedysarum, the melia azedarach, genera physalis, calamus, clitoria, anethum, plumbago, and acorus. Of purgatives, convolvulus, panicum, anthericum, asclepias, clitoria, plumbago, poa, saccharum, bignonia, ricinus, costus, cassia, euphorbia. Errhines are largely used; and include plants of the genera piper, nerium, hedysarum, achiranthes, iris, allium, betula, zinziber, citrus, saccharum, and ferula. Of diuretics we recognize only saccharum and pothos. External sialagogues are among others from the genera plumbago, sinapi, and zinziber. External stimulants, plumbago, asclepias, sinapi, and amomum. Among the uses of these last, is to increase the secretion of the male organs. Carminatives: piper, plumbago, rumex, ferula, and amomum. Astringents: lycopodium, panicum, menispermum. These are principally used for diarrhœa; and, for the healing of ulcers, and to stop hemorrhage, ficus, glycyrrhiza, diospyrus, and symplocus. We thought this catalogue would please our botanists and country practitioners.

Careful instructions are given for the choice of places in which to gather medicinal plants; and some of these rules seem dictated by a very sound botanical knowledge. Of the mineral productions, mercury is a good deal used; and very exact directions are given for the mode of preparation of it; which Dr. Wise has illustrated with several wood-cuts. A most serious prayer is offered up to Siva, before commencing the process;

and we do not wonder at it. The ire of the "wrathful one" might well be supposed to interfere with it in some cases. The black sulphuret is the form most frequently used. The precipitatum album "cures rheumatism, and the eighty-three diseases of air, as well as the diseases of bile and phlegm." It is used so that sometimes the gums are affected. This preparation is also used for colic, fistula and other affections of the anus, diseases of the eyes, and general debility. It increases strength, appetite, and color—certainly not the Europeo-American experience. How much of this difference is owing to climate? Yellow sulphuret increases the appetite, and cures dropsy and dyspepsia. Cinnabar cures all diseases, even of the most fatal kind; removes weakness, improves the appetite and memory, diminishes the fat, and cures leprosy. Gold undergoes a great deal of preparation, and its different forms are considered as most valuable medicines, curing nearly all diseases, even those in which other remedies have been used without any good results. They increase memory and restore the vigor of manhood. How natural and consonant to the temper of man is the stimulating treatment! An oxide of gold mixed with lead, sulphur, and quicksilver is considered by some practitioners as an excellent tonic, improving vision, reducing the bulk of the body, good for consumption, for pregnant women and for children, and useful in diseases of air, bile, and phlegm.

Copper is useful in fevers, particularly intermittent, diarrhœa, spleen, and diseases of the liver and blood, in leprosy, colic, piles, and indigestion, and for strengthening the teeth. Lead is recommended for leprosy, ulcers, gonorrhœa, and chronic diarrhœa. Dr. Wise says nothing of colica pictonum and palsy. Tin diminishes fat, and the diseases of phlegm; is an anthelmintic, and cures gonorrhœa and jaundice. It is to be avoided in diseases of air. Zinc resembles copper in its effects. Antimony is applied as a collyrium, and to the edges of the lids, to increase the brilliancy of the organ. It is also used as an emetic in the beginning of fever, and enters into some compounds. Iron, in the sulphate, is of use in gonorrhœa, diseases of the urine, worms, and various diseases of the bile and phlegm, and, in combination, for improving the strength. An oxide, which makes us think of the black oxide, is an excellent tonic, improves digestion, and removes all diseases. There is no alterative so good as this. Yellow sulphuret of arsenic is very celebrated in the black leprosy and in fever, and improves the color of the body. Red arsenic is used for diseases of phlegm, for asthma, etc., and is tonic. White oxide is used, in the dose of the fourteenth part of a grain, in conjunction with aromatics, to check obstinate intermitting fevers, and in glandular and leprous affections.

We run hastily over the employment of gems and corals. Of the first the dose must be small, and, we should think, the effects imaginary. Of animal bodies the classification is taken from the different parts and fluids of the same body, and has not interested us. The most active remedies from the animal kingdom, we should think, were neglected. Thus, we did not observe musk or cantharides; although the confused character of the chapter, which we fear must be charged upon the favorite of the gods, Susruta, *ϑεῦις ’επιεικέλῳ*, may have caused us to overlook them. They cannot have had the repute they enjoy among us barbarians of later ages.

The remainder of Dr. Wise's volume is occupied, for 82 pages, with pharmacy; for 36, with surgery; for 219, with the diagnosis and treatment of internal diseases; for 15, with midwifery; and for 2 with diseases of children. It would give us great pleasure to go over the whole of this, as far as we could analyze it, or even to make copious abstracts of parts of it; but this our space forbids, and we hope that the matter with which we have filled our preceding leaves has not been uninteresting. It has at least deeply interested us.

The division of diseases into sthenic and asthenic, according to Dr. Wise, "appears to have been an early opinion among the Hindus," and "is now generally believed over all the Asiatic nations." He does not quote Charaka for it. On the other hand, this favorite of the gods, who preceded Susruta, the surgeon, and even the god or Deva, Dhanwantari, and obtained his wisdom from the mighty Indra, the great authority for internal pathology, appears to have been a humoralist. He seems to have referred the production of many diseases, and the modification of all, to the relative predominancy of the three principles, air, bile, and phlegm. The agency of air corresponds most nearly with what we have been accustomed to consider a nervous temperament, combined, however, with some cases in which distention by air is obvious to the senses. The bilious and phlegmatic derangements do not differ very widely from what we have been accustomed to ascribe to the temperaments which bear the corresponding names; including the actual production of bile and mucus in quantities and circumstances beyond their usual and healthy custom.

As far as we have been able to examine the volume, the whole of this mass of science seems to bear consistently the same character—the results of undeniable and extensive observation, with a constant effort to make them agree with preconceived ideas derived from a different source. In fact, in considering the best parts of this body of doctrine, we are constantly led back to the idea of its origin in a still remoter antiquity, and of its elements and practice being remains from a destroyed empire, in which such knowledge was derived from investigation and experience, and had body and system before any dream was entertained of consigning it to posterity under the sanction of a ceremonial religion. The very fact, mentioned in the earlier part of this review, that the names of the learned men who held the meeting in the Himalaya, as originally given by Charaka, have no Sanscrit or other known etymologies, and cannot be explained, but were subsequently replaced by another set of appellatives, for which derivations can be found by means of dictionaries and catalogues of the Hindu pantheon, as with the giant in Homer,

> "Whom Gods Briareus, men Ægeon, name,"

—this fact seems to point to some forgotten period of the world, whose prosperity and history were alike annihilated, but which gave time and opportunity for the development of the Sanscrit language to that wonderful perfection ascribed to it by scholars, and for the production of the rational and useful part of this system of medical science. There is room in history for such occurrences. Genesis, as well as Homer, is full of such reduplications of names. The history may have been contemporary with the earliest dynasties of the old empire of Egypt, with the sovereignties of the nine kings who warred in the Vale of Siddim, with Ur of the Chaldees, when Abram and Lot emigrated from it, and with the reign of the gods in China. It is easy to imagine how wise men, moved by commiseration for mankind, might commit it to posterity under the sanction of religion, and ascribe to it the blessings, authority, and parentage of the gods in whom their people confided. These might be the effectual means to preserve it through the shock of warring empires, the devastation of continents, and the ruin of civilization. In this mode might the rational and humane wisdom of an earlier age descend to form what seems to us such an astonishing and incomprehensible mixture with childish fables, long-continued practical error, and unwillingness to receive improvement at the hands of others.

> "The thing that hath been, it is that which shall be, and that which is done is that which shall be done; and there is no new thing under the sun. Is there anything whereof it may be said, 'See, this is new?' it hath been already of old time which was before us."

ART. V.—*Researches upon the Venom of the Rattlesnake: with an Investigation of the Anatomy and Physiology of the Organs concerned.* By S. WEIR MITCHELL, M.D., Lecturer on Physiology in the Philadelphia Medical Association. Published by the Smithsonian Institution: Washington City, January, 1861. 4to., pp. 145.

THE most pestilent member of a repulsive family, the very type of hideous and untamable malice, loathsome in repose, and frightful in activity, the rattlesnake can hardly be looked upon as an agreeable object even by a scientific eye. It is, therefore, with a feeling very much like gratitude that we examine this record of nearly two years of laborious and hazardous investigation in this branch of toxicology. Dr. Mitchell has conferred a benefit not only upon science, but upon all who may at any time be exposed to rattlesnake poisoning, and thus has exercised one of those functions which go to constitute the patent of nobility of our profession. In the present notice we shall, for obvious reasons, abstain from criticism, for which, indeed, we see no opening, and assume the humbler task of laying before our readers an analysis of this excellent monograph.

Dr. Mitchell's researches have been directed to the clearing up of points in connection with the anatomy and physiology of the venom apparatus in the rattlesnake, to the chemistry of the subject, and to certain phenomena which cannot be studied to advantage in clinical cases, uncommon as they happily are, and distributed, as they must necessarily be, among a number of unequally competent observers. He has pursued these latter inquiries by means of experiments upon the lower animals; investigating the mode of action of the poison, its effects when administered in different ways, and the circumstances which hinder or promote its activity. Of these experiments a most interesting account is given. Another chapter is devoted to the subject of crotalus poisoning in man, and its treatment,* with a tabular summary of the cases hitherto reported.

It would be useless for us to attempt to give our readers an exact idea of the anatomical details of the poison apparatus, without the aid of illustrations; but there are some general facts which may be mentioned, if merely on account of the interest they possess.

Most persons are probably aware that the head of the rattlesnake, like that of other snakes, is so constructed as to allow of a good deal of motion between the several bones; and that the poison fangs, when not in use, are laid back along each side of the roof of the mouth, inclosed in a sheath of the mucous membrane. Each fang is planted firmly by its upper end in the upper maxillary bone, which is jointed to the lachrymal bone above, to which, at the upper end of its posterior surface, is attached the anterior end of the ecto-pterygoid bone. This latter bone is long and slender, and, when drawn forward by the spheno-pterygoid muscle, must push the upper maxillary bone forward also, causing it to rock upon the lachrymal bone, and this again upon the frontal. It is astonishing how widely this whole arrangement enables the snake to separate the jaws.

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* In a former issue of this Review (March, 1861) may be found a paper by Dr. Mitchell, on "The Treatment of Rattlesnake Bites," in which the therapeutical aspects of crotalus poisoning are very fully discussed.

Of the muscles concerned, the anterior temporal is the most important, since it not only aids in the closure of the jaws, but compresses the poison gland. This gland, closely resembling in structure the typical salivary gland, lies just below and behind the eye, and is about four times as long as it is wide. Its capsule, formed of strong, white, fibrous tissue, gives off processes which constitute suspensory ligaments. Its duct, when the head is at rest, is nearly of an ∽ shape, and terminates at the anterior part of the fang, where a fissure becomes continuous with it. A well-marked sphincter enables the snake to control the flow of venom completely. When the fang is raised, the curves in the duct are obliterated, except just where it turns downward, at the sphincter. Dr. Mitchell quotes Owen's description of the fang:—

> "To give an idea of the structure of this tooth, we may suppose a simple, slender tooth, like that of a boa-constrictor, to be flattened, and its edges then bent toward each other, and soldered together so as to form a tube, open at both ends, and inclosing the end of the poison duct. The duct which conveys the poison, although it runs through the centre of the tooth, is really on the outside of the tooth. The bending of the dentine beyond it begins a little beyond the base of the tooth, where the poison duct rests in a slight groove or longitudinal indentation, on the convex side of the fang. As it proceeds, it sinks deeper into the substance of the tooth, and the sides of the groove meet and coalesce, so that the trace of the inflected fold ceases, in some species, to be perceptible to the naked eye, and the fang appears, as it is commonly described to be, perforated by the duct of the poison gland."

Behind the root of the fang, in the maxillary bone, are cavities of reserve, in which fresh fangs lie ready to take the place of the fully developed one, when this is either shed or violently detached. This curious arrangement has been accurately studied by Dr. Christopher Johnston, of Baltimore, whose account of it is given by Dr. Mitchell; but our limits forbid our quoting it here.

The mechanism of the bite would seem to be somewhat complicated. According to Dr. Mitchell, the force of the forward motion of the head in striking is not very great, nor is its range more than one-third or one-half the length of the snake. The jaws are widely separated, and the head is thrown back so as to cause the point of the fang to project almost directly forward; but the elevation of each fang is a separate act of the animal, either, neither, or both being brought into play at will. When the blow is given, and the fang has entered the flesh, it is so acted upon through the palate bone, by certain muscles, as to drive it in more deeply, the whole head being meanwhile fixed by yet other muscles. Now the jaws are brought into antagonism, mainly by the temporal muscles, and this of course forces the fang still further in; but the more important element of the action is the squeezing of the gland, and the consequent ejection of the venom into the wound.

Should there be any entanglement of either jaw, the snake may shake its head from side to side in trying to free it, a movement which has been incorrectly thought expressive of rage. If otherwise, the muscles being relaxed and the motions reversed, the fangs are withdrawn at once. Dr. Mitchell has noticed that, when the snake is confined at the time of biting, the fangs often diverge from one another; he thinks that this is the case also when the snake is free, and that its object is to protect the lower jaw from injury.

We should be glad to mention some points of minor importance, but of great interest, relating to the provisions for restraining the flow of the poison at times when it is not desired, and to the various circumstances which may render the bite ineffectual. We must, however, be content with this allusion. A knowledge of these latter, it may be remarked, may account for the supposed efficacy of some antidotes for the venom; the fact being that in some of the cases treated the injury was either imperfectly inflicted, or not at all.

The capacity of the gland is not more than a few drops. In snakes which have been long inactive the poison accumulates. Dr. Mitchell saw one, which probably had not used its fangs for several weeks, eject fifteen drops. As to the physical characters of the venom, it is a yellowish or green liquid, glutinous, free from taste or smell, distinctly acid, with a specific gravity somewhere above 1030. When kept too long, it becomes very offensive, and vibriones and confervoid growths become developed in it; but its virulence remains. Neither in the recent nor the decomposed state does it exhibit any important microscopical characters.

Chemically examined, this poison is found to contain, besides coloring matter and an undetermined substance, both soluble in alcohol, a trace of fatty matter, chlorides and phosphates, and two albuminoid matters. One of these latter is coagulable at 212° F. The other, *crotaline*, not coagulable at 212°, is of neutral reaction, freely soluble in water, and nitrogenous in its nature. Dr. Mitchell is of opinion that the analogy, which might be on anatomical grounds supposed to exist between the venom and its gland and the saliva of man and his salivary glands, has no reality.

Changes of temperature have no effect whatever upon the activity of rattlesnake poison; nor is it impaired by mixture with alcohol, strong acids or alkalies, chlorine or iodine.

It has been asserted by some observers that this poison has a deleterious influence upon vegetable organisms. Dr. Mitchell, however, was unable to confirm the statement, although he found that seeds, placed in otherwise favorable circumstances for germination, failed to undergo that change if in contact with the venom.

Of cold-blooded animals, the frog affords the best opportunity for toxicological experimentation. Upon it rattlesnake poison produces two sets of symptoms, acute and chronic, or primary and secondary; but these are less distinct than in the case of warm-blooded animals. Occasional muscular convulsions, and loss of voluntary power, precede death; the part bitten is apt to be infiltrated with blood, and the tissues just around the bite are often disorganized. Sometimes the lungs are either dotted with ecchymosis or gorged with blood; the blood in the heart may or may not be coagulated. When dried venom is inserted beneath the skin, the local effects are much less pronounced than when a snake inflicts its bite.

The prevalent idea that a snake may poison itself is confirmed by Dr. Mitchell's observations, in opposition to the view entertained by Fontana with regard to the viper. We must, however, remark that we do not understand why a fatal result never ensued when, as Dr. Mitchell says was often the case, the venom was brought freely in contact with abraded surfaces in the mouths of snakes.

Birds, rabbits, guinea-pigs, and dogs were the warm-blooded animals employed in the experiments referred to in this paper. The symptoms varied in different cases, as it might *a priori* be supposed they would; but the longer life lasted in any instance, unless the animal ultimately recovered, the more serious were the internal lesions observed. Extravasation of blood and softening of the tissues in the neighborhood of the bite were almost invariably caused; the nerve centres were more or less injected, the heart distended and flabby, the lungs sometimes gorged, and the intestines occasionally ecchymosed. In one case, that of a small dog, the kidneys "were full of blood, and presented the appearance of acute congestion. On further inspection, a long thin clot was found in the left ureter, and bloody urine in the bladder below."

A very interesting field of inquiry is presented in regard to the action of the venom upon the different tissues and fluids. Dr. Mitchell does not think that it can pass through the unbroken mucous coat of the alimentary canal, but is inclined to believe that of the pulmonary tract a less effective barrier to it. Blood effused in a wound, in contact with the venom, is hindered from coagulating, unless the latter is in very small relative quantity. To muscular tissue the poison is a direct and active irritant, ultimately, however, causing disintegration.

With regard to the effect of the poison on the heart, an important but difficult subject of inquiry, Dr. Mitchell offers some very interesting statements. In frogs the organ seemed to be enfeebled; but this circumstance was clearly distinct from the cause of death. In warm-blooded animals the phenomena produced are quite different from those which ensue upon the action of certain poisons, which are known to owe their effects to their paralyzing influence upon the heart. We should be glad to quote freely our author's account of his researches in reference to this matter, but our limits forbid; and we could do him no justice did we attempt to condense it.

No effect whatever is produced by rattlesnake poison on the capillaries, on the intestinal walls, or on the cilia of epithelial surfaces.

Upon the nerve trunks direct contact of the venom had no visible influence. Careful experiments seemed to warrant the conclusion that the central portion of the nervous system was primarily acted upon, in the way of paralysis.

The temperature of the body always falls in this as in other forms of poisoning, and hence may be derived a therapeutical hint as to the importance of keeping it up by artificial means.

Blood, although it coagulates as usual when mixed with rattlesnake poison, does not remain so; the clots become softened, or even wholly redissolved, especially if the quantity of venom is large and the temperature high. This fact goes to explain the fluid state of the blood in cases of chronic poisoning, where the period of contact has been, of course, prolonged. Dr. Mitchell considers the agency of the venom as exerted not in preventing the development of new fibrin, but upon that already formed, as in the case of other septic poisons. The blood-corpuscles are unaffected; in the guinea-pig their contents crystallize, as they would after death from any other cause.

With regard to the causes of death by rattlesnake poisoning, we may quote Dr. Mitchell's own words:—

> "Perhaps scarcely one intelligent medical reader will have followed me thus far without arriving at the conclusion that the venom of the crotalus, like that of other snakes, is a septic or putrefacient poison of astounding energy. This very obvious view has long been held by toxicologists, and the cases and experiments of this paper assuredly do not weaken it.
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> "The rapid decomposition of the blood and of the tissues locally acted on by the venom leaves no doubt upon the matter, and makes it apparent that an incipient putrefaction of this nature may so affect the blood as to destroy its power to clot, and perhaps, also, to nourish the tissues through which it is urged.
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> "The alterations thus brought about are probably the results of a continued fermentative change, which, begun by a small amount of poison, is gradually made to involve in fatal change the whole mass of the circulating fluids. Like all fermentations, however, the rapidity depends on temperature and on the amount of the primary ferment. In one instance, a dog, struck by eight snakes, died in eighteen minutes, and exhibited an uncoagulable blood. I am aware of no other case of loss of coagulating power so rapid. It was rendered thus by

the number of localities from which the ferment attacked the system. On the other hand, a frog, a small animal, receives the same dose of venom as would have entered the tissues of a larger animal, yet it resists the poison most remarkably, by virtue of its powers as a cold-blooded creature, existing at the temperature of the atmosphere itself.

"Admitting, then, that the changes effected in the blood may be sufficient to account for the fatal results in chronic cases of poisoning by crotalus, are we justified in referring to similar causes the sudden deaths which sometimes take place in small, or even larger animals in whose tissues or fluids we can detect no change whatsoever?

"In the present state of this inquiry, the question scarcely admits of a positive answer. It is clear that in acute cases the symptoms of depression are most marked, and the heart and nerve centres are suddenly and fearfully enfeebled, so that their irritability is lessened, and is finally lost earlier than occurs in other forms of death. If, now, we knew of no other property of the poison than this one we would properly pause here, and regard the venom as having a specific influence on the heart and on the nervous irritability of some part of the cerebro-spinal centres, such as characterizes certain of the better-known poisons, such as corroval, woorara, upas, opium, aconite, etc. Since, however, we are aware that serpent venom, after remaining for a time in the body, has a specific power of attacking at least one element of the blood, and through its degradation, perhaps, of affecting the whole circulating fluid, we are naturally inclined to ask whether this power may not also be invoked to explain even the *ultimate* nature of the *sudden* cases of death from the venom. If, for instance, a pigeon is struck by a snake, and dies in thirty seconds, its tissues normal in appearance, and its blood unaltered, have we any logical right to infer that the blood may have been inappreciably, but fatally, altered, so as to be unable to sustain the life of the tissues which it feeds? Is it this possible, but imperceptible, change in the blood which acts to produce those losses of irritability in the nerve centres which we have been led to regard as the proximate cause of early and rapid death? If such be the case, then *the suddenness of the general change* in the blood must account for the failure of life, because it can be shown that animals whose blood is considerably altered may live for some time, or even survive to renew and refibrinate their vital fluids.

"*The cause of death in chronic or secondary poisoning* may, with propriety, then, be referred to the incipient putrefactive changes which affect the blood, as well as to the continued influence of the agencies which first act to depress the heart's action, and destroy nerve function.

"*The cause of death in acute cases*, when the result is so sudden that no change is perceptible in the blood in the vessels, is amply explained in the preceding pages; but while we are able to state where death begins, and in what order the functions succumb, we are still far from knowing why, or precisely how, this or that structure is affected. The proximate causes are open to experimental study, the ultimate reason, as we have seen, (page 95,) is as yet unknown.

"Summing up, then, what we have learned of the acute form of poisoning, we may feel justified in concluding: 1st. That the heart becomes enfeebled shortly after the bite. This is due to direct influence of the venom on this organ, and not to the precedent loss of the respiratory function. Notwithstanding the diminution of cardiac power, the heart is usually in motion after the lungs cease to act, and its tissues remain for a time locally irritable. The paralysis of the heart is, therefore, not so complete as it is under the influence of upas or corroval.

"2d. That in warm-blooded animals, artificial respiration lengthens the life of the heart, but does not sustain it so long as when the animal has died by woorara, or decapitation.

"3d. That in the frog, the heart-acts continue after respiration has ceased, and sometimes survive until the sensory nerves and the nerve centres are dead, the motor nerves alone remaining irritable.

"4th. That in warm-blooded animals respiration ceases, owing to paralysis of the nerve centres.

"5th. That the sensory nerves and the centres of nerve power in the medulla spinalis and medulla oblongata lose their vitality before the efferent or motor nerves become affected.

"6th. That the muscular system retains its irritability in the cold-blooded animals, acutely poisoned, for a considerable time after death.

"7th. That the first effect of the venom being to depress the vital energy of the heart and nerve centres, a resort to stimulants is clearly indicated, as the only rational mode of early constitutional treatment."

From these conclusions, as well as from a few remarks which succeed them as to the analogy between rattlesnake poisoning and certain diseases, it may be seen how obscure and difficult this whole subject is, and moreover how important it is to bring together the results of our researches in various paths, the light thus obtained being not unfrequently far more valuable than might have been expected, and none the less so for its indirectness.

Dr. Mitchell has been led by his investigations to the opinion that—

"Whatever may be the degree of virulence in the poison of different venomous snakes, its mode of affecting the system varies but little, whether the bite be inflicted by the viper, the copperhead, the rattlesnake, or the dreaded, but not more deadly, cobra. Thus, in each case, we have the local poisoning, the constitutional malady, and the possibility of inexplicably rapid death on the one hand, and of a strange zymotic disease upon the other. There may yet remain some room for doubt as to whether the apparent difference in the activity of the venom from various serpents is not due to the quantities formed or stored up in each case, and to unobserved peculiarities in the structure and form of the poison apparatus. However this may be, it is quite certain that two cases of rattlesnake poisoning may sometimes differ as much as either one of them will from a case of moccasin or cobra bite."

We have not space to examine at any length the concluding chapter of this essay, on rattlesnake poisoning in man. It contains a tabulated statement of sixteen reported cases, four only of which were fatal. A very interesting practical fact mentioned is, that the gravest symptoms often become suddenly dissipated, so as to give rise to special but groundless confidence in any remedies which may have been made use of. We have, however, already remarked that the readers of this Review may find Dr. Mitchell's views in regard to the treatment of crotalus poisoning set forth at length in a previous number, so that it would be needless for us to repeat them here.

Appended to this paper is an enumeration of the genera and species of rattlesnakes, with synonymy and references, by Mr. E. D. Cope, an experienced herpetologist; and Dr. Mitchell has given a bibliographical table, which has evidently been carefully prepared. We must confess our surprise at the extent of the literature of this branch of toxicology.

We are aware that we have not, in the foregoing notice, done full justice to Dr. Mitchell's most valuable essay. This, however, has been necessarily the case, from the number of experimental details contained in it, and from the condensation which marks its style. But we have endeavored to set forth its leading features, and to give an idea of its character. In conclusion, we would congratulate the friends of science in America upon the existence of the Smithsonian Institution, supplying as it does the want of literary patronage on the part of Government. But for its fostering care, such papers as that of Dr. Mitchell would in many cases be lost to the world for want of the proper auspices for publication.

Art. VI.—*A Warning to Fathers, Teachers, and Young Men, in Relation to a frightful Cause of Insanity, and other serious Disorders of Youth.* By W. S. Chipley, M.D., late Professor of the Theory and Practice of Medicine in the Medical Department of Transylvania University, Medical Superintendent of the Eastern Lunatic Asylum, Lexington, Kentucky. 18mo., pp. 188.

In this little work Dr. Chipley purposes to lay before young men the evil consequences resulting from indulgence in what is reputed to be the sin of Onan, and also to point out to parents and teachers the causes and mode of prevention of the vice. In the fulfillment of this task, he gives us an exceedingly interesting volume, in the form of a popular essay, in which, on the one hand, he skillfully avoids cloaking his meaning in elaborate technical phrases, and at the same time certainly does not shock the modest sensibilities of the public on the other. The position of Dr. Chipley, as superintendent of the Eastern Lunatic Asylum of Kentucky, renders him a peculiarly fit person to give advice in regard to a disease—

for so we may call it—that is filling our lunatic asylums and prisons, and is gaining strength day by day with every step that our boasted civilization makes, until it becomes a matter of serious import to inquire, has modern progress anything to do with the development of abuses of the genital organs? In antiquity there seems to have been no mention made of masturbation, or any of its serious consequences. There is no mention of it in the Bible; although the vice has Onan for its godfather, there is no proof that he was a masturbator. In compliance with the customs of the ancient Hebrews, he was obliged to marry the widow of his elder brother who had died childless. If he were to have children by her, the first-born would bear the name and inherit the estate of the deceased, "in order that his name might not be blotted out from Israel." Onan, to escape the disgrace which would have resulted from his refusal to marry the widow, did so; but not wishing to injure his own interest or those of his existing children, by having offspring from such a marriage, after he had effected penetration, spilt his semen on the ground. The Hebrew of the original gives reason for such interpretation. The words *im, bo,* are translated "when he had gone into," which certainly means penetration. Lallemand says that every day conscientious husbands do the same thing, either to avoid increasing their family beyond their means, or in consequence of the danger that pregnancy would entail upon their wives, so that the motives of Onan alone were blamable; his act in itself had nothing in common with masturbation. The sacred writings, then, afford no proofs of the prevalence of the vice; nor do the works of the classic poets, who certainly have concealed nothing of the infamous immorality of ancient times, afford us any reason to believe that it was practiced, while the same reticence is observed on the part of the medical writers of those days. During the dark ages, through the feudal era, and, in the midst even of the licentiousness of the *ancien régime,* we hear nothing of it, and we are led to the unflattering conviction that it is essentially a vice of modern times; that where religion, science, and education extend most widely their elevating influence over the globe, that there should that crime, which is the most injurious and degrading that humanity knows, be most rampant.

The causes, then, of the vice must exist with us, and must be exposed and counteracted, if we wish to extirpate it; and this Dr. Chipley does, as far as the compass of his modest volume allows him. He divides his work into three chapters: on the causes of masturbation, on its consequences, and on its prevention. The chapter on the causes is similar to the chapter on the same subject in Lallemand's elaborate work; and very clearly points out to those having charge of the young the numerous apparently trivial circumstances which lead to the implanting of the fatal habit. Late rising, feather beds, imprudent or vicious acts of the attendants of children, disease of the bladder, an elongated prepuce, ascarides in the rectum, neglect of bodily exercises, the assembling of boys in the dormitories of schools, etc., are quoted as inducing circumstances. The author, in remarking on the irritation of the glans penis by sebaceous matter contained under the prepuce, asserts that it is a common cause, the friction used to allay the itching exciting in the mind of the youth the idea of the habit, and hence considers the performance of the Mosaic rite as necessary in a sanitary point of view, and adduces in his support the authority of Dr. Copland, who says: "The neglect of circumcision in Christian countries is certainly no mean physical cause of the prevalence of this vice, and of many of the consequences which follow."

The chapter on the effects of masturbation presents a horrid catalogue of evils of body and mind. All persons do not suffer alike: in some the mind is impaired, in others the body; none escape with impunity. Deformity may result from arrest of development. Dyspepsia, necessitating a stimulant regimen, ending in drunkenness, occurs. All the principal organs of the body participate,—lungs, liver, heart, and brain. What physician is there who has not been consulted for disease of the heart, which a moment's examination has convinced him to be a functional disorder, the result of self-abuse? while chorea and epilepsy, with affection of all the senses, are frequent. Insanity is quoted as one of the most frequent and destructive consequences, and some interesting statistics on the subject are given; and though, in one case—that of the Massachusetts Lunatic Asylum—the percentage of those who had become insane through masturbation is as high as 32 in 100, yet Dr. Chipley believes that truth would justify a still higher scale, affirming, with Guislain, that, where mental alienation comes on without manifest reason, the cause, in young people, should be looked for in Onanism. Impotency is a common sequence, and frequently leads to suicide.

The prevention and cure of the vice occupy the last chapter. Muscular exercise, early rising, and separation of the sexes at an early age, are insisted upon as preventives; while, for those who have already contracted the habit, the author recommends that they be made cognizant of its fatal results, and submit themselves to a proper course of treatment. He gives no detailed plan of cure, as he believes that this would be out of place in a popular work. Altogether, it is a well-written little volume, presenting nothing absolutely novel to the professional reader, but eminently well adapted for the purpose for which it is designed, viz., of awakening a proper feeling in the minds of parents as to the magnitude of the vice, and of pointing out lucidly and honestly its means of detection and prevention; and its dissemination in the hands of parents and teachers would result in an amount of good that must amply repay its philanthropic author.

ART. VII.—*The Wife's Domain.* By PHILOTHALOS. 12mo., pp. 162. London: John Churchill, 1860.

THE contents of this volume, as the author tells us, consist of portions of a series of discourses which have been from time to time delivered at a small establishment devoted to the relief of diseases of mothers and children, to the poor women who with their children came there for treatment. The work does not, therefore, profess to be a profound treatise on the subjects which it discusses, but rather a popular medium of information to those to whom medical technicalities would be unintelligible. Who it may be, thus disguising his identity under the name of Philothalos, it is impossible, of course, to say; but we can readily imagine how those to whom the work is especially adapted will puzzle over the pedantic name of the author.

The book is divided into four chapters, which include the duties of the Young Couple, the Mother, and the Nurse, and the Care of the Nursling. Although especially addressed to the poor and those who have to toil through an anxious life of dependence, many of the suggestions for the comfort and happiness of the married state are applicable to all conditions and all ranks of life. Yet the publisher, in issuing so neat a little work, has almost removed it from popular purchase by those of slender means, the very class the author seemed desirous of instructing.

The conditions and qualifications to be mutually exacted and established before a marriage contract is agreed upon will carry but little force, we fear, with those who are bent upon a conjugal union. They are, of course, such conditions as would seem to a writer on the subject to offer the best prospects of happiness; but what number of poor couples will be prevented by any advice writers or lecturers may give them from entering the married state by *condition second*, for example, which states that "a man ought not to marry unless he is able, either by his earnings or by independent means, to support a wife and separate establishment, which should be furnished beforehand"? In many dwellings of the poorer classes, long after matrimony has been entered into, children appear to be the main articles of furniture visible. To be sure, under such circumstances of poverty, "it is the progeny of such unions which make up the vast majority of our reprobate juvenile population. They are vagabonds from their cradle."

Moral obligations and moral delinquencies are next discussed; but the medical portions of the book are those to which we must particularly refer. The various symptoms of pregnancy are dwelt upon, the hygienic and medical points connected with that condition, the various therapeutic agents which may be safely trusted for domestic purposes in the hands of the ignorant, the subjects of diet and exercise, delivery, accidents consequent upon parturition, etc. It is all very well, perhaps, for women to know all these points thoroughly, and yet we are forcibly struck with the fact that most probably the efforts of "Philothalos" will be successful in converting a good many old women nurses into infallible practitioners of midwifery, in their own conceit, and prevent the family *accoucheur* from being sent for at times when his services would be of vital consequence. It is well enough to let women understand the causes and consequences of their complaints, but to give to the ignorant classes who seek advice at the dispensaries and hospitals formulæ for treating their own maladies is, to say the least, highly reprehensible. We are not sorry that the author has placed it in its present shape beyond the reach of those in whose hands it might be calculated sometimes to do harm.

"The best nurse for an infant," says the writer, "is its own mother." Advice on this subject to the poor, who have not the means of carrying out the physician's instructions, is "like succoring the penniless by simply telling them to get themselves clothed and fed;" for a regimen, properly selected, and suitable to the child's temperament and digestive powers, with every requisite accessory, cannot be attained by the poorer orders of the working classes, should it be necessary to appeal from the mother to artificial sources for the supply of nutriment. The little details of treatment of the new-born, as to the proper modes of washing, dressing, etc., seem almost too trifling for a medical man to discuss so minutely, although they may be of great consequence to the health of the child.

If "Philothalos" be not a medical man, his knowledge of the minutiæ of little babies' toilet must, nevertheless, commend him to the women and children whom he addresses, as a very useful person to consult upon the shape and length and quality of petticoats and sleeves and bandages. No nurse ever wrapped up a baby's legs and arms so tenderly; one would think that "Philothalos's" wife must have contributed to a large portion of the work the benefits of her own experience or that of her female friends. Nevertheless, with all these minutiæ of details, most of the advice is sound, and practically useful, unless it may induce many a poor family now and then to endeavor, even in extreme cases of peril, to dispense with the application to a competent practitioner.

ART. VIII.—*A Handbook of Hospital Practice, or an Introduction to the Practical Study of Medicine at the Bedside.* By ROBERT D. LYONS, M.D., Physician to Jervis Street Hospital, Dublin. 12mo., pp. 186. New York: Samuel S. & William Wood, 1861.

THERE are more medical men, we fear, who know how to make observations at the bedside, than comprehend the uses to which their investigations may be applied. The tendency is to collect symptoms and histories of cases without, in many instances, rightly understanding the connection between them, or perhaps without possessing the preliminary knowledge essential to the correct interpretation of the facts collected. Many a discovery, interesting to the profession, might long since have been made, had intelligent observers recorded their investigations, and followed them up from the facts deemed worth retaining at the time of their occurrence.

The work before us is intended to guide the student to the best modes of observing phenomena in the clinical examination of patients, and of recording them for future reference. The author at the outset furnishes the reader with "a skeleton map of the countries he is about to explore," a tabular view of the diseases to which the human frame is liable. The nosology proposed by Dr. Farre, and employed in the registration of deaths in England, is that adopted by the author, and is considered perhaps more simple, comprehensive, and satisfactory than any other. Without entering into the minutiæ of classes and orders, and their subdivisions, we may state that all diseases are divided by him into four classes:—1. Zymotic diseases. 2. Constitutional diseases. 3. Local diseases. 4. Developmental diseases. And what a catalogue a list of this kind embraces—every disease which gives us pain, and anxiety, and dread summed up in one long table of eight columns, with sometimes almost unpronounceable Latin names added to them!

The subject of Preliminary Examination of a Patient embraces a careful summary and detailed description of bedside practice in the apparently minor but eminently important facts which may be learned by the exercise of the senses of sight, hearing, smell, and touch, before a single interrogatory is addressed to the patient. The author dwells upon the essential points of a correct diagnosis gleaned in this way, but the practitioner ought at once to learn to study such details himself without appealing to books for assistance. At the outset, however, a guide to medical diagnosis may be a valuable companion to him, and as such, the instruction obtained from a work like that of Dr. Lyons might be replete with useful hints.

The order proposed by the author for the examination and recording of the history of a case, and for the exploration of the condition of the several functions and organs, is the following: I. The antecedent health and diseases, precise date, first symptoms and progress of present disease till first examination by the reporter of the case. II. The symptoms and signs presented under the following heads: General moral and physical condition; state of cerebral functions and organs; state of the pulse, and other general phenomena of the circulation; state of respiration; of the general cutaneous system, etc. III. Therapeutic applications. IV.

Daily progress of the case. V. Termination of the case. The arrangement is certainly simple enough, and no confusion could possibly occur in such a record.

The remaining special divisions of the Clinical Examination of Patients refer to the true modes and uses of practicing auscultation and percussion, the importance, as diagnostic symptoms, of expectoration, hemorrhages, the examination of the urine, etc. One of the most valuable chapters in the work is that devoted to post-mortem examinations, each portion of the body being taken up for consideration, and much practical information being afforded in regard to dextrous manipulations and points of delicate management which so often tell to the credit or the discredit of the physician. The writing of prescriptions, a glossary, and forms for recording cases occupy the remainder of the work.

ART. IX.—*A Manual of Military Surgery; or, Hints on the Emergencies of Field, Camp, and Hospital Practice.* By S. D. GROSS, M.D. 18mo., pp. 186. J. B. Lippincott & Co.: Philadelphia, 1861.

THE following extract from the preface of this work will inform the reader of the motives which induced the author to prepare it for the press:—

> "The sole object which prompts me to publish this little book is an ardent desire to be useful to the young physicians who have so hurriedly entered the volunteer service, perhaps not always with a full knowledge of the weighty responsibilities of their position. It treats, very succinctly, of various matters not generally discussed, except in large and ponderous volumes, inaccessible in the camp and on the battle-field. It is essentially a book for emergencies; portable, easy of reference, always at hand. The substance of it was originally intended as an article for the July number of the *North American Medico-Chirurgical Review*, and it was not until I had made considerable progress in its composition that the idea suggested itself to my mind that it might, if published separately, be of service to a part of my profession at this particular juncture in our public affairs."

The book consists of thirteen chapters, and of an appendix comprising an account of the regulations for the admission of physicians into the medical staff of the army. The principal topics are distributed in the following order:—

> "I. Historical Sketch of Military Surgery. II. Importance of Military Surgery. III. Qualifications and Duties of Military Surgeons. IV. Medical Equipments, Stores, and Hospitals. V. Wounds and other Injuries. VI. Amputations and Resections. VII. Ill Consequences of Wounds and Operations. VIII. Injuries of the Head, Chest, and Abdomen. IX. Diseases Incident to

Troops. X. Military Hygiene. XI. Disqualifying Diseases. XII. Feigned Diseases. XIII. Medical, Surgical, and Dietetic Formulæ."

Without making any pretensions to a treatise on military surgery, this little volume comprises, within the smallest possible limits, really all the leading facts, with many important statistics of the subject, and we have no hesitation in recommending it as a safe and useful guide to the young army and naval surgeon. Hospital stewards and nurses, too, will find it of great value in the discharge of their important duties. Every page abounds in practical precepts.

ART. X.—*Summary of Medical Science.* Edited by WALTER S. WELLS, M.D., compiler of Epitome of Braithwaite's Retrospect, etc. Part i., April, 1861. New York, Charles T. Evans.

WE are not of those who think it a matter of consequence that the large mass of papers contributed to American and Transatlantic medical journals should be preserved in any other form for reference than that in which they first saw the light. Too often it happens that a practitioner, moving in a limited circle of information, or perhaps an extensive circle of ignorance, never meeting with anything out of the usual run of cases, nor prescribing anything out of the ordinary routine practice of the books, meets with something that puzzles him, and induces him to rub a little of the rust off the surface of his medical reading. He can find nothing in his books to elucidate the matter; he has nothing to refer to in the medical journal way, but what is about a quarter of a century old, and no fellow colaborer in the same cause in his confined atmosphere, who is not equally unfamiliar with recent literature. The next thing we hear of the case is its appearance in the "—— Medical Journal," unless the editor recognizes it as an old acquaintance of his younger days, and rejects it.

Occasionally, by a careful process of selection, something brilliant, sparkling in the midst of a mass of comparatively unimportant trifles, may be found worth preserving. He who knows how to sift the materials placed before him, and to distinguish the truly useful from the really valueless, is the best fitted to accomplish the task of compiling a "Summary," "Retrospect," "Abstract," or whatever else we may call it.

The cases, abstracts of which are contained in Dr. Wells's "Summary," are mainly derived from foreign medical periodicals. Those quoted from American journals are generally gleaned from the same source; and but few American observations are recorded, although the object of the work, as announced in the preface, is "to present to the profession a semi-annual digest of the essentially practical articles embraced in the principal European and American medical journals." The compiler thinks, perhaps, it is wiser to furnish to Cisatlantic readers chiefly the abstracts of cases which are not so readily accessible as those published at home. Dr. Wells would have received, we have no doubt, just as much credit as a compiler, had he republished in his "Summary" a larger number of the abstracts carefully prepared in our medical journals, of both foreign and American cases of interest.

Every collector of abstracts labors under this disadvantage, that no medical reader is ever perfectly satisfied with the selection presented to him, but almost involuntarily entertains the idea that, had the task been allotted to *him*, he would have been more successful in his choice of subjects. We acknowledge, from our own experience, that the act of selection is not always easy. We miss from the contents of Dr. Wells's work a large number of the valuable cases which have been, by competent *abstractors*, if we may employ such a term, deemed worthy of a place in the department assigned to abstracts in this and other journals. Their presence would have given additional merit to the "Summary," while their absence detracts from its completeness.

The abstracts, however, are well done, though it is not easy, from the arrangement, to tell whether they are made by Dr. Wells and others from the journals at their disposal, or whether they occur as abstracts in the periodicals themselves. Thus, in one or two places we notice that the NORTH AMERICAN MEDICO-CHIRURGICAL REVIEW is quoted as the authority for cases, as if the compilers of the "Summary" had themselves made the abstracts from that journal, whereas they had been carefully prepared for the latter from other authorities. To those who are fond of studying the medical history of a past year in its details, the work before us will possess points of interest and of satisfactory reference.

ART. XI.—*Transactions of the Fifteenth Annual Meeting of the Ohio State Medical Society, held at Ohio White Sulphur Springs, June 12th, 13th, and 14th, 1860.* Columbus, 1860. pp. 267.

PROCEEDINGS of medical societies are much more acceptable in print than formerly, because they are so much more satisfactorily prepared. The volume before us, for instance, is a collection of facts and reports and addresses and the usual accompaniments of a medical convention, neatly contained in a rather attractive volume. Much of the interest attaching to all such associations and bodies is, of course, local. The address of Dr. L. Firestone, of Wooster, the President of the Society, is devoted to that never-failing subject for discourses, medical education. He is in favor of the six months' term, and does not seem to recognize the objections that have been urged against the extension of college sessions.

One improvement we will suggest in the next issue of the Society's "Transactions." No book is complete without an index or table of contents. So much is that omission felt, that in England a proposition was introduced in Parliament to fine any publisher or author who failed to insert so indispensable an addition. The contents of the work may be specified as follows:—

1. Report of Committee on Obstetrics, by M. B. Wright, M.D., Cincinnati; which embraces a large number of interesting physiological and practical facts and cases in that science and art. The writer expresses a decided repugnance to the use of pessaries, and discusses the views on prolapsus uteri, and other affections, embraced in the works of Professors Meigs, Miller, and others.

2. Report of the Committee on Cannabis Indica, by R. R. McMeans, M.D., of Sandusky. This paper sketches a history of the physiological effects, modes of preparation, etc., of this remarkable exotic, especially from the experience of the writer. It is mainly a collection of facts carefully culled from all practicable sources, though its applicability to certain pathological conditions—those, for instance, of a hysterical nature, sleeplessness, and nervous spasmodic cough—is based upon the confidence which Dr. McMeans reposes in its virtues.

3. Report of the Committee on Medical Literature, by Edward B. Stevens, M.D., Cincinnati. This is a review or *resumê* of the recent literary contributions of our countrymen, especially as regards Ohio medical literature. Excluding periodicals devoted to collateral or associate departments of medical science, there appear to be, at the present time, about thirty-five medical journals published in the United States, viz.: three weekly, eighteen monthly, eleven bi-monthly, and three quarterly. Fourteen States afford the medical journalism of the whole Union, if these statistics are perfectly reliable, and we have no reason for believing that they are not.

4. Report on the Effects of Chloroform upon the Intellectual Processes, by T. L. Wright, M.D., Bellefontaine. This paper is intended as "an inquiry concerning the credibility of testimony relating to transactions of a mind partly unconscious." In the view of the author, such evidence should be subjected to all the rules and exceptions of circumstantial evidence, and should be fully corroborated by other circumstances.

5. Report of the Committee on Obituaries, by C. P. Landon, M.D., Westerville.

6. Report of the Committee on Diseases of the Eye, by A. Metz, M.D.,

Massillon; though well written, comprises merely the views on ophthalmology of a general practitioner, who has not devoted special attention to the affections of the eye.

7. Report on Diseases of Cervix Uteri, treated with the local contact of Nitrate of Silver, by W. H. Reeves, M.D., Springfield.

8. Report of Committee on Medical Societies, by G. F. Mitchell, M.D., Mansfield, Ohio.

9. Report on Insanity, by Richard Grundy, M.D. A carefully prepared paper on mental affections, their causes, etc, the statistics of institutions, etc. A useful source for reference to those who are interested in a large class of unfortunates.

Original Communications.

ART. I.—*Medical Topography of Florida.* By G. R. B. HORNER, Surgeon U. S. N.

THIS State, though seceded from the Union, is still worthy of attention. Situated between 25° and 31° north latitude and 81° and 87° west longitude, having the Atlantic on the east side and the Gulf of Mexico on the south, she enjoys an equable and temperate climate. Her shores are fanned daily by sea breezes, and at night the land breeze usually prevails. Copious showers fall in autumn and winter, and commonly, also, in July and August. The most frequent and heavy are in winter, but constant rain and days uniformly cloudy rarely occur.

The following may be set down as the ordinary condition of the air as indicated in West Florida:—

Barometer—Average	30	inches.
Maximum	30·56	"
Minimum	29·65	"
Thermometer—Average	60	degrees.
Maximum	96	"
Minimum	19	"

But I have heard of the thermometer being lower. No snow fell, to my knowledge, during my residence of more than ten years at the Naval Hospital near Warrington; though during the winter of 1859–60, the weather was as cold as it had been for many years, and ice an inch thick formed.

The summer lasts from seven to nine months, and near the Gulf is very sultry, the air being highly charged with moisture, and mould and rust forming on all things liable to them. So great is the dampness of the air, sometimes even in winter, that plank is substituted for plaster in public and private residences, and walls not lathed and plastered precipitate moisture or steam to such an extent as to form streams trickling down them to the floors. From a mantle-piece, two years ago, I twice sponged a half-pint of water, which had come down from the unlathed face of a brick chimney in my chamber. This occurred during mild after cold weather, which had chilled its walls. In East Florida the northeast trade-wind blows constantly on the Atlantic coast, especially at the southern end of the peninsula and the reefs and islands running to the southward and westward. Hence, at Key West, this wind is used for pumping sea water into high wooden pans, by means of windmills, for the manufacture of salt. The total of this made at the pans of Colonel Dennis, at the eastern end of the island, had reached 60,000 bushels per annum, when I was there three years ago, inclusive of the salt obtained by simply letting the sea water evaporate in pans filled by the tides. At Warrington and Pensacola the sea breeze regularly arises in the south during the morning, blows afterward strongly from southwest, and, dying away in the evening, hauls around to the west. During the night the land breeze springs up in the northwest and blows until morning, rendering the night cool—sometimes uncomfortably so—and it is thought unhealthy by many persons, from that wind blowing across the marshes and low grounds of the interior of the country. Most, if not all, of the western part of this region may be correctly described as low, undulating, and sandy, covered uniformly with dense forests of yellow pine, interspersed with dwarf black oaks and open marshy spaces, termed savannas, often filled with water in winter. But these oaks scarcely appear above the ground until the pines are cut or burnt down, and they then spring up, grow thickly, and attain a height of ten or fifteen feet on an average. Near the sea the live oak is also found growing either among the pines or together, and attain vast size after many years' growth. In a yard, near Fort Barrancas, may be seen some about ten feet around the trunk, with huge craggy branches spreading out their small oval leaves for 150 or 200 feet around. The yellow pine is converted into plank and timbers, and forms the most important article of commerce in West Florida. The live oak was carefully nursed by our government, for the use of the navy, until secession occurred, and several persons were paid salaries as inspectors or superintendents of its live oak lands. Along the western shores of the Gulf the land consists of white sand without shells or pebbles; not a stone is to be seen on them; and the only ones observed by me were some sandstones in the pine forest on the road from Mobile to Pensacola. But Key West and other islands adjacent, those at Cedar Key at the junction of the peninsula of East with West Florida, are formed of shells, crude or broken, or in powder like fine white sand, and of coral. So great is the quantity of these calcareous substances that the shoals at Key West seem to be of chalk and water mingled. In these shoals sponges, green-turtle, king-fish, a large eel of fine flavor, conchs, and many other soft and shell fishes abound.

As the sea-coast of East Florida differs from that of West Florida, so does the interior; for in the former limestone of secondary formation is plentiful. Vast quantities are seen under and at the sides of the railroad between Cedar Key and Fernandina, distant 155 miles; and the swampy lands are very rich. In their natural state they form dense forests of cypress, oak, sweet gum, magnolia, cabbage-tree, maple, and other trees; they have, besides, an undergrowth of palmetto grass, whose rough roots, of size sufficient for large trees, render the clearing of the ground for cultivation very difficult and expensive. But the enterprising farmers from South Carolina and other States have succeeded in making many plantations for the cultivation of cotton, sugar, and corn, and East Florida has become a formidable rival to other Southern States in those products.

As I passed over the above road, I was told of one plantation south of it which had four hundred slaves employed on it; and the best cotton I have seen in the South was upon this western side of the road, near its junction with the railroad to Jacksonville.

Agreeably to the statement of the late talented surgeon, Bernard M. Byrne, of our army, who died at Fort Moultrie last September, of yellow fever, "three hogsheads of sugar have been made on one acre of high hummock land, after it had been six years in successive crops of corn, without the aid of manure." These swamps form the most durably rich lands, and next to them are what are termed hummocks, which are low or undulating, high, dry, and covered with luxuriant oaks and other trees. The pine land of Florida is divided into three kinds, the richest of which, he affirms, has nothing analogous to it in any of the other States, its surface being covered for several inches in depth with a dark vegetable mould, beneath which, for several feet, is a chocolate-colored sandy loam mixed, for the most part, with limestone pebbles, and resting on a substratum of marl-clay, or limestone-rock.

Besides the finest trees mentioned, the cedar, odoriferous bay, pride of China, the titis, remarkable for its small leaves and still smaller beautiful flowers, the water-oak, and various other trees, are found in West Florida. Among them are the persimmon, French fig, and orange, which grows kindly and produces abundantly, though occasionally killed by intense cold. Its fruit has also been very much injured by a very small black insect infesting its cuticle. The wild plum is produced abundantly, and when cultivated is excellent. The fruit of the persimmon, when ripe, is sweet, luscious, and not excelled by the oriental date. Both of these fruit-trees grow spontaneously. Chinquepins, blackberries, gallberries, the stramonium, pokeberries, and wormseed are products of the soil, and the plants of the two latter grow most luxuriantly and spontaneously wherever the seed are scattered. In spring the poke forms one of the best vegetables to be had in the country. By cultivation and frequent irrigation peas, beans, cabbages, turnips, radishes, Indian-corn, arrowroot, cantalopes, pumpkins, and water-melons are obtained, as are likewise potatoes and tomatoes. Indeed, there is no doubt that when Florida becomes thickly populated its productions will be vastly increased, and exceeded by few countries in the world; for there is no season when certain fruits and vegetables may not be raised on her soil. She has, moreover, a great advantage over the Western States by having her fine forests undergrown with grass, which affords pasturage for horses, sheep, deer, and cattle throughout the year. It grows spontaneously, and is rendered more abundant by being burnt when dry. This is, therefore, yearly done by graziers, though the forests are often consumed or killed by the flames of the burning grass. The numerous ponds of water, the frequent rains, and copious streams of water from innumerable springs afford still greater facilities for grazing. The rareness of tornadoes, violent and long-continued storms, and long droughts render Florida more desirable to agriculturists than Texas, and other portions of America subject to them.

In mineral wealth Florida is very deficient, but her animal kingdom is decidedly wealthy in some respects. Her ponds, lakes, rivers, and bays abound in fish and birds. Among the former are the trout, mullet, red and black snappers, the favorite pompeno, sheepshead and Spanish mackerel, catfish, flounders, perch, and a variety of shellfish, of which the oyster is most abundant. The porpoise, shark, and devilfish, the largest of the flat ones, should also be enumerated. The common fresh water turtle, the green sea turtle, and crabs abound. In the sandy ridges and pine forests and away from water are found burrowing the land turtle or terrapin, called gopher—a very poor and ugly one—but when first roasted or fried and boiled, forms an excellent soup, much used during warm weather, when the gopher is most abundant.

Birds.—Besides the ordinary domestic ones are many which are always found, and others to be met with during winter, when the cold in the Northern States forces them South. The chief birds I saw were doves, crows, hawks, owls, gulls, snipes, partridges, sparrows, robins, woodpeckers, buzzards, mocking, blue, and jay birds. Eagles, thrush, wild ducks, cranes, swallows, martins, whip-poor-wills, and paroquets are likewise found; but the only ones of the last named I saw were in East Florida.

Hares, oppossums, raccoons, squirrels, and deer are the chief quadrupeds hunted. Bears, wolves, foxes, and moles are also found.

Insects and reptiles are abundant. Lizards, alligators, black adders, vipers, moccasins, and chasers; the small ground rattlesnake, which has no real rattles, and the large rattlesnakes are very numerous. The latter attain an enormous size, being sometimes six or nine feet long, and of corresponding thickness. So numerous are these snakes that even in winter persons must be cautious in going into places where they may be concealed, or come forth to bask in sunshine. They feed on young hares, rats, and frogs which abound in swamps or branches, and when night comes on croak in concert; while the locust-like green insects, called katydids, sing in the adjacent trees. Among frogs the most remarkable are those living on trees, and having feet with suckers, by which they climb and hold on with great ease. After showers they appear in great numbers, and make the air resound with their singular notes. Beetles, ants of many kinds, including the large blood-red ones, spiders, sand flies, the small yellow-horned ones, and musquitoes are countless, and it is hard to determine which of the two last named bite the most fiercely. The common house flies are scarce.

Diseases.—From my observations, as well as those of others, malarious fevers may be correctly asserted to be the most common affections in Florida, near the marshes and fresh water ponds and streams; but away from such localities they are rare, and the inhabitants generally enjoy as great exemption from those diseases and others, as perhaps any people in our country. Yellow fever occurs from time to time, but is said to have been always from importation, particularly from New Orleans, Mobile, and the West Indies. At Warrington, it is stated, it has happened regularly, at intervals of seven years, for a considerable period; but this did not prove true last year, (1860,) when no cases of yellow fever occurred, though it was the seventh year since the great epidemic of 1853, when this fever was so fatal there, and created a general belief that it was contagious, as there was the strongest evidence of its having been communicated to sailors, soldiers, nurses, and civilians in the navy-yard, town, naval hospital, and military barracks at Fort Barrancas, by their association and being confined in the same apartments. On this subject I made special inquiries of the citizens and Dr. Bishop of the navy, as well as of Dr. Hargis, of Pensacola, and they fully confirmed the statements of Assistant Surgeon John F. Hammond, in his report to Surgeon-General Lawson, in 1854, regarding the prevalence, causes, and treatment of this fever, and other medical subjects. Dr. Hammond states that "the apparent contagiousness of the disease was a subject of general remark, and not a question." But he remarks afterward: "It may be that during the epidemic of this season (1853) there was a mild form of typhus fever, running its course at the same time with yellow fever, tending to contagiousness." Dr. Hargis, of Pensacola, related verbally to me a number of facts to prove that yellow fever was contagious there in the above year, and told me of a mattress, on which a case had ended fatally, near Milton, in September, having been sold in December following, and communicated the disease to the person who subsequently slept upon it. These and similar facts the doctor published in the *New Orleans Medical and Surgical Journal.* The late Dr. George Tyrrel, surgeon to the Warrington Naval Hospital in 1853, likewise reported, on the 4th of September, to Surgeon Thomas Harris, chief of the bureau of medicine and surgery, concerning yellow fever, that "it is evidently epidemic ; but we have strong reasons to believe it is also contagious. The nurses have most of them had it, and several of them are now down. Invalids who have been employed in attendance upon the sick, have been attacked, and in one instance two patients, occupying beds on each side of a man who died of the disease, were seized with it. The steward of the hospital has been very ill, and Dr. Jeffrey and myself have been slightly indisposed." Finally, Surgeon Byrne states, in his report of November 10th, 1858, to Surgeon-General Lawson, relating to the introduction and prevalence of yellow fever among the troops at Fort Moultrie : "It seems to me that if we regard yellow fever as a contagious disease—a fact of which I entertain no doubt, and the truth of which I shall endeavor to prove on another occasion—the facts here stated will satisfactorily account for its spread on a sandy, dry, healthy island, where no local cause of disease could be discovered, but where the population was much larger than it had been before, and the residences more crowded than they usually are in the largest cities."

During my stay in Florida no instances of this fever were under my care. One or more were reported to be in or about Warrington; but one was said to have been that of a man from Mobile; and of sixty cases of remittent and intermittent treated in the hospital while in my charge, a majority were brought to it from ships of war arrived from cruising on the West India station, including Mexico and the coast of Central America. The remaining cases were sent from the navy-yard, and belonged to it and the marine barracks.

Treatment.—This consisted principally, in these cases, of acidulated and hot drinks, according as the fever was in the hot or cold stage ; of the neutral mixture, made with bicarbonate of potassa or carbonate of ammonia, with from one to two grains of tartar emetic in it ; of blue pill and calomel, when the tongue was furred or the liver affected ; and of the sulphate of quinine, chiefly in solution, sometimes in pills, and in from one to five grain doses, during remissions and intermissions. When the stomach was irritable, a blister was put over it, and, the cuticle having been raised, the quinine was finely powdered and sprinkled upon the raw surface beneath. For severe palpitations of the heart, which were frequent, the tincture of digitalis and tincture of veratria viride were given; the latter in from three to five drops in solution, and used effectually.

Of the cases of remittent fever six came from the United States ship Fulton; and four of them, having a typhoid character, were treated correspondingly. Her commander, Captain G. G. Williamson, died of this fever at the navy-yard, having vomited incessantly. Indeed, it was believed that had not the vessel been wrecked on the coast of Santa Rosa Island, and her coal been taken out of her, the fever would have become decidedly typhus icterodes.

Next to miasmatic fevers, diarrhœa, dysentery, catarrhs, pulmonic diseases, rheumatism, and eruptions prevailed, especially during the summer and winter solstice. Among the children of Warrington and Walsey, a village east of the navy-yard, cholera and convulsions were very common, and frequently fatal. Dysentery among adults is often destructive, but the too free use of calomel in its treatment, and other improper remedies, may rationally be assigned as a principal cause of its mortality. Hiccough is one of the most ominous symptoms. In the treatment of this affection, anodyne enemata, and tannin with opium, followed with aniseseed oil, were the most effectual remedies. Sometimes pills of ipecacuanha, opium, and calomel were given, and in all cases the patients were subsisted chiefly on well-boiled rice-water, arrow-root, and soft-boiled eggs, during convalescence. In a very bad case, accompanied with hiccough, which had resisted every other means, this fatal symptom was relieved by the inhalation of chloroform, and the patient entirely recovered soon afterward.

Catarrhs, bronchitis, and other pulmonic disorders prevail during the chilly, damp weather of winter, and rheumatism is common at the same time along the coast of West Florida. Hence invalids, who either live on it permanently or have resorted there to be relieved of the above affections, are liable to have them increased. During the sultry weather of summer, cutaneous diseases prevail, especially among strangers, and even among old residents of sanguine temperaments, much exposed to the sun. Boils, carbuncles, and lichen tropicus are the most common. Carbuncles are sometimes very severe and fatal. Soon after my arrival at the hospital I was called in consultation to a merchant who had one the size of a hen's egg over the left eye, another which had partly destroyed the palm of one hand, and a third one so large as to occupy the back and one side of his neck. He was a large man, of sanguine temperament and intemperate habits, and was also suffering from lichen tropicus. So malignant were the carbuncles that no remedies restrained them. Blue mass, morphia, quinia, and guaiac internally, with bitter infusion, and linseed poultices, solutions of acetate of lead, sulphate of zinc and caustic potassa, frequent lancing, and other means, were used in vain. The fingers of his wife became sore from dressing the carbuncles, and he at last died. It may be well, moreover, to state that, having myself been previously affected with lichen tropicus on the coast of Central America, and likewise in Florida from the period of my arrival, I finally cured the disease by the use of aqua ammonia, except between my shoulders; an enormous carbuncle appeared there a few days after my patient's death, and was not cured until the lapse of nearly two months. Besides the above lotions, I found a solution of nitric acid, in the proportion of one drachm to two ounces of water, one of the most efficacious to remove fungus and heal up the parts. Blue mass, and solution of sulphate of quinia in elixir of vitriol and water, to promote the secretion of bile, and restore strength, were frequently employed. At first, there having been loss of appetite and slight fever, a digestible diet, chicken broth, bread, and coffee, constituted my chief sustenance. In the treatment of carbuncles I found that after a certain time, that is, when suppuration had been established, warm poultices rather caused an extension of the disease, and it was best to leave them off and restrain inflammation adjacent, with frequent applications of lead-water and a dressing of simple cerate, mingled with a few grains in each ounce, and spread upon a bit of old muslin.

Naval Hospital.—This spacious, airy, and elegant structure, founded in 1827, and finished in 1846, is situated eight miles from Pensacola, close to Warrington—which lies between the hospital and the navy-yard—and within sight of Forts Pickens, McRea, and Barrancas. From the two former the hospital is separated by the lower part of Pensacola Bay, and from Fort Barrancas and its barracks by a forest of live oaks and pines which extends backward of them for many miles. The hospital stands upon a bluff of yellow sand thirty feet high, some hundred yards back from the beach, and westward a half-mile to the latter fort. All the land occupied by the above-named works, as well as the intervening country as far back as the great bayou between the navy-yard and Pensacola, are reserved territory of the United States, and were never ceded to Florida, although now in her possession and that of the other cotton States.

The hospital and buildings attached to it occupy twelve acres of ground, inclosed within a substantial brick wall eleven feet high, resting on a stone foundation. During my term of service there I had fourteen acres more inclosed in two lots—one of about four, the other of ten acres—between the front wall and back one, and having Preston Avenue, or the main street of Warrington, passing between the two lots. These were cleared of swamps, leveled, adorned with additional trees, forming an avenue to the water, and planted with the Bermuda grass, which grows by joints, sends down a root from every one, has great vitality, and is an admirable grass for a sandy soil. Hence, it is invaluable in forming banks and terraces. To cause it to grow it is simply dug up and buried at intervals of a few feet in the sand; if the season be favorable the young blades soon spring up, the roots shoot forth from every joint and penetrate to a great depth, while their horizontal stems form a perfect net-work. If this grass come in contact with a fence—wooden or stone—it spreads underneath, and sometimes grows upward, like a vine, for several yards. So deep does it grow, and such is its tenacity of life, that, once well rooted, even in the poorest white sand, it is hardly possible to eradicate it permanently.

The hospital, situated southwest from Fort Pickens, consists of a main building and two wings, presenting a front of 400 feet. The main edifice is three stories high, surmounted by a large cupola resting on pillars, and commanding a prospect of the Gulf of Mexico, forts, and harbor; the towns of Walsey and Warrington, with the navy-yard between them; a distant view of Pensacola and the country back of the harbor and sea, and the Island of Santa Rosa, stretching for forty miles to the eastward. The wings are two stories high, and each story, as well as the main building, has a portico thirteen feet wide on every side. The pillars of the first story are square, and made of brick; those of the upper are of wood, handsomely turned, and sixteen feet high. The doors and windows open into the porticoes and extend to the floor, so that, when open, the ventilation is perfect. The main building has the kitchen; two dining-rooms and a bath are in the first story; a spacious parlor, and dining-room for officers, a dispensary and library in the second story, and two fine wards in the third one. In the garret are four large tanks lined with zinc, and filled with water, by a steam-engine, from an artificial pond in front of the west wing. The pond is supplied from a spring at the foot of the bluff and west of the hospital, as well as from the drainage from the former. The tanks furnish water for the kitchen, baths, and dispensary. Drinking water is chiefly supplied by rain collected on the slate roof, and conducted by pipes into two large cisterns, one in the first story of the main building, the other in that of the eastern wing. This and the western contain the smaller wards, cells, rooms for officers who are sick, and attendants, and a small museum I was forming, when detached, and containing a collection of Floridian curiosities. The whole hospital is heated by fuel burnt in open fire-places. The library was formed about fifteen years ago, chiefly by contributions in books and money from men and officers belonging to the Warrington station, from citizens in various parts of the Union, and from members of Congress, and our government. The two largest contributors in money were the late Surgeon Francis Hulse and George Tyrrel; but to the former is principally due the establishment of the library. Hence it has been given his name. Its contents consist of upwards of 1400 volumes, among which are many of ancient and modern history, the Family Library, Sir Walter Scott's novels, many other interesting works, and some standard medical and surgical treatises. The library having been formed mainly for the amusement of invalids, the latter works were very deficient when I took charge of the hospital, and while there, I appropriated nearly all the income of the library in supplying the deficiency.

All the wards and chambers are furnished with iron bedsteads, two hundred and fifty in number—including some in the pest hospital—but many more could be accommodated. Each bedstead is supplied with a hair mattress and musquito bar, which is absolutely necessary during warm weather. The latter hospital, built about twenty years since, and often termed French from being first occupied by invalids from the French squadron in the Gulf of Mexico, stands back of the western wing. It is made of the same materials, and after a similar style to the chief hospital, having porticoes all around each of its two stories. The first one contains the cells, rooms for officers and attendants; the second story contains two pairs of handsome wards communicating by folding-doors; water was supplied from a brick tank in one corner, but it having destroyed the adjacent floor, it was converted by me into a store-room, and a well back of this hospital now supplies its water. Having none, I had an ordinary large brick privy built for it; but the chief hospital has two of much greater size, two stories high, with tanks in their garrets, and standing back of each wing. An arched brick culvert acts as a drain to these privies, and carries its refuse into the forest east of the hospital. For the interment of the deceased there is a cemetery of three acres of land inclosed by a new brick wall, and situated some hundred yards north of the hospital grounds. Within these, at the back, stand an ample, handsome stable adorned with a portico in its whole length, and other out-houses, and just within the hospital walls, eastward and westward, are the dwellings of the surgeon and assistants, built in the same fine style as the former and separated from its yard by picket fences, inclosing from two to three acres for each building, with groves of live oaks, some pines, and other trees, such as adorn the hospital yard and the lots, intervening between it and the harbor. Beneath the shade of these trees were formerly seen walking or resting the sick and wounded, luxuriating in the refreshing breezes which, every day in summer, blow from the Gulf from morning until evening. Now, our seamen, when sick, can no longer resort to this hospital, as it is occupied by the invading forces of the Southern Confederacy.

ART. II.—*Cases in Surgery, with Clinical Remarks delivered at the Philadelphia Hospital.* By S. D. GROSS, M.D., one of the Surgeons to that Institution.

Reported by MR. THOMAS C. BRAINERD.

Stricture of the Urethra cured by Internal Division.

Case 1.—Michael McS., aged sixty-four, a farm laborer, of irregular habits, had suffered for fifteen years from difficulty in passing his water. For some months this had been upon the increase, and the stream had rapidly diminished in size, until it could be maintained only by the strongest effort. He experienced at all times a dull pain over the region of the bladder, and every attempt to void his urine produced also a distressing burning sensation in the perineum. He was obliged to pass water about ten times in the twenty-four hours, rising for that purpose frequently through the night. His general health was somewhat impaired, and he had great depression of spirits.

On examination, a firm, unyielding stricture was discovered in the body of the penis, about four inches behind the anterior orifice, which resisted the passage even of the smallest bougie. The patient had had gonorrhœa thirty years previously, from which he recovered with difficulty, but he knew of no immediate cause for the affection at the time of its appearance, and his stout, muscular frame seemed to indicate an excellent natural constitution.

Case 2.—The second patient, Robert W., was a tall, well-made man, a tailor by trade, thirty-six years old, who contracted gonorrhœa fifteen months since, but made such a rapid recovery that he thought no more about it. But four months afterward he noticed that the scalding reappeared in micturition, which soon became laborious and painful, as well as more frequent. His urine, at the time of his admission to the hospital, came away in drops, so that he occupied nearly half an hour in emptying his bladder, yet he was obliged to do this three or four times every night and about twice as often during the day.

His stricture was situated in the membranous portion of the urethra, just behind the bulb, was perfectly impassable to any instrument, and from the manner in which it held the point of the bougie conveyed the impression of great firmness.

Case 3.—Charles S., about twenty-seven years of age, a slender, feeble man, of sedentary habits, also suffered with gonorrhœa three years ago, and had never been able since to urinate with any comfort. The stream had steadily grown smaller, until it was now no larger than a small straw, while the patient was constantly tormented through the day by uneasy sensations, and occasionally experienced sharp twinges of pain. By straining he had brought on some prolapse of the rectum, which was increased by the costive state of his bowels. He was considerably emaciated, and felt incapacitated for any active exertion. The stricture was located a little anterior to that of the last patient, at the termination of the bulb, and, like both the others, was hard and unyielding. The urine at times was tinged with blood, and the urethra throughout its whole course was so sensitive that the scalding was an intense annoyance.

Operation.—A precisely similar operation was employed in each of these three cases. The patient, having all the clothing removed from his lower limbs, was placed upon his back, with the shoulders and pelvis slightly elevated, the thighs flexed upon the body, and the legs upon the thighs, the knees being widely separated. Chloroform was then administered, and a thorough examination made of the situation, firmness, and, as far as could be ascertained, the extent of the stricture; using for this purpose a silver catheter, having a somewhat conical point, as being lighter than a metallic bougie, yet sufficiently strong and inflexible.

The urethrotome, about the diameter of a No. 10 catheter, but somewhat less curved, had the bulb containing the concealed blade half an inch behind the point, to which it diminished gradually. The cutting edge was on the upper or concave side of the instrument, although Professor Gross generally prefers it upon the lower; the stilet retracted the blade into its sheath as soon as the pressure was removed from the knob at its other extremity. The point of the canula being carefully advanced as far as possible into the constricted portion of the urethra, the knife was projected, great care being taken at the same time to preserve the handle of the instrument in the median line of the body, to diminish the danger of making a false passage. The stilet was then allowed to spring back, and the extremity again pressed forward, repeating the incision if necessary, and slowly continuing this process until the loss of resistance gave evidence that the stricture was completely divided. In the first and last cases one incision only was required; in the second, however, both the base and sides of the urethra were notched several times before the obstacle was overcome. As soon as it was passed, the urethrotome was withdrawn and a catheter of rather larger diameter inserted, which slipped at once without difficulty into the bladder.

After-treatment and results.—The retention of the catheter being provided for, by securing it to a double T-bandage, a full anodyne was directed in case of pain, and the patient confined to bed. The following day the instrument was taken out, cleaned, and reinserted, the process being repeated daily until the urethra regained its natural character.

No fever or ill consequences of any sort appeared in any of the cases, but, on the contrary, the health of each patient began to improve almost from the moment of the operation. Three weeks afterward, when they were again brought before the class, each of them said that he had not suffered either pain or inconvenience, and that what had been before the greatest agony had become a pleasure from the ease and force with which he was able to project a stream of almost fabulous dimensions.

Remarks.—In connection with these cases, Professor Gross offered the following observations:—

The partial diminution of the calibre of the urethra, to which we give the name of stricture, is either temporary and paroxysmal, caused by spasm, or the result of an effusion of lymph, upon, in, or under the lining membrane, in which case it is termed organic, and is permanent. Only the latter requires surgical treatment, which must be modified to meet the age of the stricture, which is soft and elastic when recent, but hard and unyielding when time has effected its complete organization. Ordinarily its form resembles the narrowing produced by a ligature cast around a membranous tube; but not unfrequently it is more or less accumunated on one side, giving a zigzag course to the canal, or even stretching across like a bridge, making two distinct passages. In extent also there is great diversity; the constricted portion being sometimes not over a line in length, at others several inches, while it is not uncommon for the tube to be affected simultaneously in several different places.

This plastic effusion may arise from a traumatic cause, but most frequently it is the result of long-continued inflammation of the urethra; either simple, or, as is the fact in ninety-nine cases out of a hundred, produced as an immediate effect of gonorrhœa, or of its unskillful treatment. There is, however, a bad variety of stricture, very apt to follow chancre, situated at the anterior urinary orifice, in which the narrowing is close behind it. Otherwise it may be located in any part of the tube, but is most frequently found near the junction of the bulbous and membranous portions.

The direct consequences of this affection are painful and difficult urination, with a greater frequency in its necessity. But the violent and oft-repeated straining soon produces hypertrophy of the muscular and mucous coats of the bladder, and a sacculated or columnar condition of that organ, with an inflammation which, not unfrequently extending along the ureters to the kidneys, produces enlargement, suppuration, and an accumulation of pus in those organs, followed eventually by death. The urethra behind the stricture also becomes dilated, abscesses often forming which, breaking externally, lead to perineal fistules; occasionally, also, the prostate gland, seminal vesicles, and even the testes participate in the inflammatory action. In old cases the rectum is often relaxed so as to prolapse, or become the seat of hemorrhoidal tumors. These accumulated annoyances, with the pain which necessarily attends the affection, soon break down the strongest constitution, and life is rendered miserable, if it is not destroyed.

Characteristic as the difficulty and frequency of micturition and the diminished stream may be, it is yet impossible to form a correct diagnosis of stricture without making an examination as to the patency of the canal by means of some instrument. The best for this purpose is the ordinary silver catheter, the graduated staff of the French surgeons being entirely unnecessary, since, if it is required to ascertain the exact depth of the constriction, nothing is better than to mark it on a wax bougie with the finger or thumb nail.

In strictures which are comparatively of short standing, the ordinary process of dilatation is sufficient to produce a cure; but if the obstruction has remained long enough to be thoroughly organized, there is nothing so efficacious in securing a rapid and permanent deliverance as its division. The metallic bougies usually employed in the former case are much too heavy, nothing answering the purpose so well as a silver catheter, choosing one of small size at first, which should be very gently pushed down to the seat of the affection, through the stricture, and on into the bladder. This instrument has also the great advantage of being permeable, so that it can remain in the canal, if necessary, without incommoding the patient. On the second day the same instrument should be reinserted, and kept in the passage for some minutes, or even an hour, and then one of larger size substituted and almost immediately withdrawn; continuing this process day by day, gradually increasing the size of the catheters until the urethra acquires its natural dimensions. Or, as this generally occupies several months, the several sizes of catheter may be used in rapid succession at one operation; but, although this method succeeds admirably with proper care, it is apt to excite violent inflammation of the urethra, requiring the most active measures before it can be subdued. If the stricture is near the external orifice, and very soft, excellent results are often obtained from using a bougie of slippery elm, which, being allowed to remain in the passage, becomes moist and swollen, thus rapidly accomplishing the necessary dilatation. But whatever method be employed, there is an invariable necessity of introducing, at regular though increasing intervals after recovery, a large-sized instrument into the bladder, as otherwise there will inevitably be a reproduction of the disease.

Far preferable in the case of old, hard strictures is the operation by division; since this does not act mechanically only, for the knife is the most powerful alterant within reach of the surgeon, and such is the local impression made by it, that the absorbents are immediately stimulated to act upon the abnormal mass of effused lymph, and the consequence is a cure, at once permanent and certain.

In the three cases before us, it would take an experienced operator perhaps months to accomplish by dilatation what was here done in a few minutes, much more efficaciously, for the chances of recurrence are greatly diminished. All the constitutional depression arising from long protracted treatment is avoided, and the patient is at once transported from a state of misery to one of comfort. The chief danger of the operation is the risk of making a false passage, but this is easily avoided by delicate manipulation, guided by a thorough knowledge of the anatomy of the parts. The internal incision is readily effected in any part of the canal by the use of the urethrotome, or, if the stricture is near the orifice, by a narrow, straight, blunt-pointed bistoury, and is much less liable to be followed by infiltration and other bad consequences, than division from the exterior. In very many cases the constriction is so tight or the passage so tortuous, that it is impossible to introduce even the delicate staff of Professor Syme, and unless the stricture is completely impervious, easily distinguished from the outside, or complicated with fistulous sinuses, perineal section is generally unnecessary. Such, however, is the delicacy of this part of the human organism that, whatever mode be employed, the practitioner must keep a close watch on the ensuing phenomena, and be prepared to meet at once and energetically the first unfavorable symptom.

Sloughing Chancre.

Michael A., aged twenty-eight, a married man, of muscular frame and good constitution, by trade a harness-maker, entered the Hospital on the eighteenth of February. According to his own story, he had impure connection three weeks previously, followed by a sore just behind the corona of the head of the penis, which so troubled his mind that he commenced drinking, and was in consequence unable to give any further history of his disease. He only remembered that in his more sober moments, he felt intense pain, and that there had been a very abundant discharge of pus.

When admitted, the whole prepuce was hanging as a dead and blackened mass below the penis, the head of that organ was greatly enlarged and inflamed, and an angry, sloughing ulcer covered more than half of the remaining portion. It was bathed in an abundant, thin discharge, was the seat of constant pain, and, except a few granulations, showed no evidences of any healthy reaction. The patient was emaciated and feverish, his limbs tremulous, and face pallid, although these symptoms might be owing in some measure to his recent dissipation.

Notwithstanding that his pulse was full and regular, he was at once put upon generous diet and sustaining treatment, taking twenty-five drops of the tincture of the chloride of iron three times a day; while the nitric acid lotion, in the strength of five drops of the acid to an ounce of mucilage of gum-arabic was employed locally. The inflamed edges were freely painted with the tincture of iodine, diluted with an equal quantity of alcohol, and the granulations, as soon as they appeared, were dressed with simple cerate upon patent lint. The whole organ was enveloped in an emollient poultice, and kept at rest and elevated.

The beneficial effects of this course were manifested almost immediately. The pain disappeared in a few hours; the margins of the ulcer assumed a healthy appearance, and the sloughs speedily separated. The patient soon recovered his strength, and before three weeks had passed cicatrization was rapidly taking place over the diseased surface. No morbid erections or unpleasant symptoms appeared at any time, nor were there any lymphatic enlargements or secondary consequences. A portion of the head of the penis, about as large as a marble, nearly all of the spongy portion, and the lower half of the cavernous bodies still remain; but all the prepuce and the greater part of the skin over the organ were lost. A little superficial sinus, running up subcutaneously toward the pubic symphysis, is still open, but is healing rapidly under the use of mild injections.

Remarks.—Perhaps the most favorable circumstance which can happen to a patient suffering with well-confirmed chancre, is a little sloughing; for in this process the specific virus is generally destroyed so that no constitutional symptoms follow. As in this case, the upper portion of the prepuce is usually the part first attacked, the gangrenous action sometimes merely perforating it, but often involving the remainder of the penis. There is at first an increase of feverish excitement, followed eventually, however, by typhoid symptoms, which constitute the real danger of this form of disease. In treating it we must watch closely the indications, using depressants or stimulants according to the state of the system. Locally, our object must be to arrest the gangrene and favor the detachment of the slough, making use of iodine and medicated poultices, with mild escharotics to the dying mass, relieving all constriction, allaying fetor and promoting cleanliness and rest. The reparative process is best advanced by the nitric acid lotion with laudanum or dilute citrine ointment, and warm water-dressings or soothing poultices.

Fibroid Tumor of the Prepuce; Removed by Excision.

Charles S., aged twenty-four, single, contracted syphilis several years since, but had been comparatively free from evil consequences until some months ago, when he had a number of preputial warts, for which he neglected to use any medical treatment. The result was a permanently œdematous and hardened condition of the retracted prepuce, which had steadily increased in size until the whole under side of the penis was occupied by an ovoidal tumor, nearly three inches in diameter. When first admitted, an indistinct fluctuation could be detected in its lower portion, and it had accordingly been treated by acupuncture and sorbefacient applications with the effect of slightly reducing and solidifying it; but of late it had been quite stationary. The penis had become thin and flabby and much incurvated, though there were occasional imperfect attempts at an erection.

The patient being very desirous of relief from the inconvenience and necessary impotence, the tumor was removed by excision, two cutaneous flaps being left, one on each side, which, after the operation, were approximated with silver-wire sutures. He made an excellent recovery, there being complete union throughout. Some hemorrhage attended the operation, but was readily controlled by ligatures.

Professor Gross remarked that this tumor was essentially an hypertrophy of the skin and cellular tissue, caused by the long-continued œdema of the prepuce, which was itself produced by the irritation of the venereal excrescences. The cellular structure in this situation is remarkably abundant, as well as extremely lax, and therefore readily admits of the infiltration of serum and even of plastic matter, especially if the morbid action be at all severe or protracted. In this case, the lymph, after organization, had undergone the fibrous degeneration, and though itself only incommoding by its bulk, might in time become the seat of more serious disease.

Interesting medico-legal questions may arise from a case like this, as to the competency of the patient to enter the married state. Encumbered and mutilated as the organ was, it would be impossible to declare upon oath that copulation or even actual impregnation could not take place.

Internal Hemorrhoids.

Case 1.—James McC., a laborer, unmarried, thirty-two years old, had suffered for years with internal piles. He was habitually costive, and could never empty his bowels without great pain, and not unfrequently loss of blood. He felt a constant sense of weight and oppression in the anal region, but, except this trouble, his general health was good.

The bowel having been forced to protrude over a vessel, the patient was placed upon his knees and elbows on the table, and the three tumors which were exposed seized, one by one, with a tenaculum, until a large, strong ligature could be firmly tied around the base of each. As they were of large size and had been disposed to bleed, the ends of the thread, instead of being cut off, were allowed to hang down beyond the anus, to assist in bringing down the bowel in case of secondary hemorrhage.

The ligatures and tumors came away between the fifth and ninth days; the bowels were then gently acted on by a mild laxative, and the rectum washed out every day with a full enema of cold water. The result was a perfect cure.

Case 2.—Daniel M., a shoemaker, aged twenty-nine, presented himself at the hospital, on account of several external hemorrhoids of medium size, which, at the time of his admission, were much inflamed and exceedingly tender and painful. The suffering was in great measure relieved by washing them every day with Castile soap and cold water, and by attention to his bowels; but a cure was finally effected by incising the tumors and turning out the dried and hardened contents.

Remarks.—In these two cases very different affections are presented under nearly the same name. An external pile, as it is commonly called, is simply an extravasation of blood, a sort of apoplectic clot, in the cellular tissue at the verge of the anus, caused by anything which provokes a rupture of a hemorrhoidal vein, followed by an escape of its contents. The blood coagulating, forms a hard lump, which, if proper care be not taken, becomes inflamed and excessively painful. Great as is the annoyance it produces, nothing is easier to cure, as the only essential indication is to get rid of the troublesome effusion by a free incision. Relief is thus afforded in a few seconds, and the patient is able to go about his business. But an internal hemorrhoid is a far more serious affection, being in reality an erectile tumor or aneurism by anastomosis, arising from a dilatation of the minute capillaries of the inferior hemorrhoidal arteries and veins. As they are covered only by the mucous membrane, they not unfrequently give rise to considerable loss of blood, and sometimes occasion the most distressing pain, especially in defecation. Horseback riding, a standing posture, habitual costiveness or diarrhœa, in short, anything which promotes local congestion, greatly aggravate their symptoms; yet it is remarkable that they often exist for years without seriously affecting the general health. Much may be done to relieve them by local means, as cooling enemata and mild astringent lotions, with emollient poultices, leeches, or ointments, if they become inflamed or protrude. Attention to the diet, an occasional aperient, and evacuating the bowels while in a recumbent posture, are also serviceable.

The only permanent benefit is derived from their removal, which should be effected with the ligature, the bowel having been protruded over a vessel, an act which is rendered much easier by immersing the hips for some time in warm water. If the tumor has a very broad base, a curved needle with a double thread may be passed through it so as to ligate it in two portions. Excision ought not to be thought of, and the écraseur is more painful, while the danger of secondary hemorrhage and stricture of the rectum is far greater than when use is made of the ligature.

Hydrocele treated by Seton.

Case 1.—Thomas W., aged fifty, was tapped three months previously, and twelve ounces of fluid drawn from the scrotum. The tumor soon reappeared, and at the time of the operation was quite large, of globular form, fluctuating distinctly, and rapidly increasing. Injection of tincture of iodine, diluted with six parts of alcohol, was first tried; but as this failed to secure the requisite amount of inflammation, a seton was introduced five days after the evacuation of the fluid, and allowed to remain four days, with the effect of completely obliterating the secreting cavity.

Case 2.—Charles G., the other patient, was a small, thin man, twenty-six years old, a tailor by trade, who had for ten years carried a large tumor in his scrotum, conical in form, which had never diminished in size or shown any material alteration. The testicle, as is occasionally the case, was found to be at the bottom of the swelling, which was elastic, but could hardly be said to fluctuate. The exploring needle indicated a large cavity with serous contents, and at once determined the diagnosis. Eleven ounces of thin, dark-colored coagulating fluid were drawn off; after which the trocar was reinserted in the canula and a counter opening made, through which was passed an eye-probe armed with a strip of muslin about a third of an inch in width, which was loosely tied in front of the scrotum. Forty hours afterward, the seton was withdrawn, as the swelling had in great measure reappeared, and its hardness indicated a sufficient effusion of lymph. A sorbefacient lotion of acetate of lead and opium was applied, and the scrotum kept suspended, until the end of the third week, when the cure was perfect.

Remarks.—Hydrocele may be confounded with hernia and sarcocele or disease of the testicle. Its irreducible character, elasticity, and the absence of impulse on coughing, as well as the history of its growth from below upward, its pyriform shape, the unaltered condition of the spermatic cord, and the usual position of the testicle at the junction of the inferior and middle third instead of at the bottom, are sufficient to distinguish it from the first of these affections; while its regular surface, smoothness, and translucency, with the fact of the peculiar sensitiveness of the testicle being still retained, separate it from the other. The only inconvenience it occasions arises from its bulk, and hence many practitioners content themselves with merely evacuating its serous contents as often as the fluid may accumulate; but if properly treated, the radical cure is at once easy and certain. The great desideratum is to procure an amount of inflammation sufficient to change the character of the serous membrane and secure obliteration of the sac, and the ordinary method of injecting such stimulating fluids as iodine, alcohol, port wine, lime-water, or astringent solutions is generally sufficient for this purpose. But the seton is far the most reliable mode, for when it is used we have complete control over the inflammatory action, and can carry it safely to the required point. A good rule is to wait until the tumor acquires about one-quarter of its original size, and has become well hardened from the effusion of lymph, before withdrawing the exciting cause of the irritation—a period generally of about forty-eight hours. In congenital hydrocele, where the cavity of the vaginal tunic connects with that of the peritoneum, it is usually sufficient to obliterate the canal by applying the pad of a truss over its course, and using sorbefacient lotions on the scrotum, which, of themselves, often effect a cure in children, and sometimes even in adults.

Ununited Fracture of the Humerus, of Twenty-Seven Months' Standing, successfully treated by Excision and Silver Wire.

Edward Shannon, aged thirty-two, of feeble constitution and dissipated habits, broke the humerus of his left arm about three inches above the elbow, twenty-seven months ago. He was under the influence of liquor at the time, and being away from home, neglected to have it thoroughly examined for more than three weeks after the accident. By that time there was great inflammation and suppuration, so that apparatus could not be properly applied, and in consequence there was no attempt at union, notwithstanding that pressure, friction of the broken ends, and even injection of iodine were tried. At the time of the operation there was great mobility at the seat of fracture, and though the patient had considerable use of his limb, it was nearly devoid of strength.

On the nineteenth of January, after chloroform had been administered, a straight incision, about four inches in length, was made through the posterior portion of the triceps muscle, exposing at once the membrane which had incased the fracture. On severing this, it was found that the oblique extremities had been rounded off and become incrusted by semi-cartilaginous tissue, so as to form a very perfect false joint, which was lubricated by an abundant thin, glairy fluid, though nothing like a synovial membrane could be detected. They were each in turn brought through the opening thus made, and cut off at right angles by means of a delicate saw introduced behind them. It was necessary to take about half an inch from the lower fragment and nearly three times as much from the other. One ligature, made of three strands of the usual sized silver wire, was passed horizontally through each section of bone, and another diagonally across the edges, which, after having been tightly twisted, were cut off short, and the ends bent up so as to lie close beside the body of the humerus. The incision through the skin was then approximated closely with interrupted sutures, and the whole arm placed in well-padded curved splints of binders' board.

For about forty-eight hours all went on well, but on the third day the patient began to feel considerable pain in the wounded arm, so that the dressings had to be removed, which it was hoped would not be necessary until a much later period. There was at this time considerable erysipelas, both in the city and hospital, and the edges of the incision, when the splints were taken off, were found to be affected with that disease, which rapidly became phlegmonous; the abscesses extending up over the shoulder and down below the elbow, the suppuration being very extensive. Supportive treatment was commenced at once, consisting of good diet, milk-punch, and the tincture of the chloride of iron; with local applications of dilute tincture of iodine and poultices of linseed meal. The patient's strength was reduced quite low, but he finally reacted; and when at last he was able to go out into the open air, he convalesced rapidly.

During this period, of course but little could be done, by apparatus or otherwise, to secure the fragments of the broken bone in the proper situation, and it was therefore quite unexpected to find that very decided union had taken place. The patient is now again wearing the splints, and there is every prospect of his having a strong and useful limb. Indeed, when last seen, on the twenty-third of May, nearly four months after the operation, the union was almost complete; a large quantity of callus had been thrown out, the elbow-joint had regained its motion, and the general health was excellent.

ART. III.—*Remarks on the Treatment of Gleet by Local Remedies.*

By WILLIAM C. OTTERSON, M.D., of Brooklyn, New York.

THE slight discharge from the urethra so often met with after an attack of gonorrhœa, and known as chronic blenorrhagia, gleet, or chronic gonorrhœa, occurs under various circumstances, and its seat, cause, and treatment has been a source of much diversity of sentiment among authors. Cooper, Vidal, Acton, Hunter, Chelius, and others differ in their views in regard to the seat and pathology of the disease, yet they all concur in the general plan of treatment, namely, stimulating and astringent injections, cubebs, and terebinthinates, and speak, as a last resort, of the use of the bougie.

We find these writers placing the seat of the disease in the prostate, Cowper's glands, the lining membrane of the urethra, the lacunæ, and the navicular fossa. I am disposed to think that Sir A. Cooper was nearest right, and that the glans penis and the lacunæ therein are the real seat of this affection. What the precise pathological condition of the glans is, I am unable to say, but it would appear that, owing to its delicate structure and the fact of its being the most frequent seat of acute attacks, the onus of the chronic form of the disease should be centred upon this portion of the organ; and that many of the most obstinate cases of gleet, in the absence of stricture and disease of the prostate, are dependent upon a morbid condition of the glans, and not upon any disease or change of the lining membrane of the urethra itself. My reasons for this belief are: 1. The amount and character of the discharge. 2. The point of irritability upon passing an instrument. 3. The inadequacy of injections to control the disease permanently. 4. The failure of internal medication or hygienic measures to exert any special influence over it.

1. The discharge is usually found to be nothing more than opaque mucus, varying in consistence according to circumstances. This in the morning occupies the meatus, at times almost blocking it up, and is easily removed if the patient runs the finger along the under surface of the urethra, beginning about an inch from the meatus, when the secretion escapes. After that the urethra may be squeezed from the prostatic region to the meatus, and yet no more of the discharge be procured. 2. In passing an instrument, when about an inch from the meatus, and corresponding with the navicular fossa, the patient complains of pain; and after the instrument passes this point the whole tract of the urethra beyond is discovered to be free from irritability. This I have found as an almost invariable result in my cases of obstinate and long-standing gleet when there was no stricture. 3. Injections of all kinds have utterly failed to make any permanent impression upon the discharge, though there have been remissions for a few days at different times. 4. Internal remedies have failed to exert any perceptible influence over it.

If the lining membrane of the urethra alone were involved, the result of medication would be different, for it is well known that, in acute gonorrhœa, many of what are called specific medicines do exert a modifying and decidedly beneficial influence over the diseased tract of the canal. But in this form of gleet they fail, because their action is not adapted to the disease of this particular structure. If Cowper's glands are the seat, then the application which I make in these cases would appear to be useless, as the remedies are not applied to the portion of the canal where they are situated.

As preliminary to the treatment I first examine the patient to ascertain if there is stricture or narrowing of the canal, and if I find this to be the case, the usual measures are adopted to overcome it. Sometimes this alone will effect a cure; but if the discharge continues, I introduce a No. 8 metallic grooved bougie, which is applicable to most cases; the sizes may vary from No. 6 to No. 10, the groove being filled with citrine ointment or calomel: the latter I prefer as being more certain in its action. The instrument need be passed only a sufficient length up the urethra to get the point beyond the glans penis, when it should be carefully revolved several times. It should be allowed to remain in for three, four, or five minutes; and then a probe, adapted to the curve of the instrument, should be passed down the groove; if they are then withdrawn simultaneously the whole of the calomel or ointment will be left in apposition with the parts. This may be repeated twice or thrice a week, at the same time that the bowels are kept soluble. Upon withdrawing the instrument a little smarting may be complained of, and perhaps a few drops of blood issue, but this is not important. If this plan of treatment is followed assiduously, the patient may be assured with much confidence that a very short time only will be required to remove every trace of the most obstinate and hitherto intractable gleet.

Within the last few years, I have treated successfully cases of acute gonorrhœa, spermatorrhœa, and irritable urethra with little modification of the practice as here laid down.

I look upon this plan as preferable to any other, as it is less painful to the patient. After a few introductions of the instrument, the urethra becomes accustomed to its presence, and no inconvenience is experienced.

I have had quite a large number of these cases under my care, and having formerly been in the habit of adopting the old stereotyped practice, have seen many of them linger from month to month, and finally pass into other hands. Since, however, I have become convinced that *benefit can be derived only from direct alterative medication to the seat of the disease*, and have pursued the plan of treatment laid down in this paper, I have not failed to cure a single case, marked benefit arising after a few applications, even under apparently the most unfavorable circumstances.

As some authors have recommended the use of mercury, with a view to produce its specific effect upon the system, I transfer one case from my note-book, illustrating its action in this affection.

A man consulted me on account of a chancre, which I cauterized with solid nitrate of silver, and after giving a cathartic kept him on blue mass with opium, until its specific action became manifest, and as there was some induration, kept up a slight mercurial action for some time by iodide of potassium and compound extract of sarsaparilla. This treatment being continued about two weeks the chancre healed kindly. The patient now, for the first time, informed me that he had been suffering from gleet for eight months, which, at the time he first applied, was quite severe; but thinking that the medication and regimen adopted for the cure of the syphilis would also suffice for his gleet, he did not mention it till after his primary disease was cured; but finding he was not free from his old discharge he wished further advice. I proposed the bougie, but having been present when I had introduced it on his friend, he desired that some other measure should first be tried. I consented, after giving an unfavorable prognosis. The old routine of injections was gone through with, and after one month's trial he determined to submit to the medicated bougie. Upon examination, no irritable point was found after the end of the instrument had passed the navicular fossa, nor was there any stricture or narrowing of the urethra. A perfect cure was effected in about three weeks, no relapse following.

A gentleman applied to me on account of a gleet, the sequel of a gonorrhœa, which had troubled him about five months, and for which he had treated himself with injections and balsam of copaiba.

Upon examination, I found some narrowing of the canal just anterior to the bulb, with irritability at this point and at the navicular fossa. This constriction readily gave way to the use of graduated bougies, but the gleet continued. I treated him upon the old plan for six months; all the different remedies were tried, and strict rules of regimen enjoined. During this period there were several remissions, but nothing permanent. At last I introduced the medicated bougie twice a week, at the same time removing all dietetical restrictions. At the end of six weeks, although he daily drank large quantities of beer, he was entirely cured

Some may be disposed to think that this case required tonics and nourishing diet, but these had been given as one of the changes during the six months of the old treatment.

In spermatorrhœa and irritable urethra the adjuvanta necessary to a cure will readily suggest themselves, both hygienic and therapeutic, such as cold bathing, friction, and proper ventilation in the sleeping apartment, with, perhaps, the internal use of iron, nux vomica, and quinine.

ART. IV.—*Urinary Calculus in a Child Two Years of Age, measuring one inch and three-quarters in circumference, successfully removed by Dilatation of the Urethra.* By J. TAYLOR BRADFORD, of Augusta, Kentucky.

ABERNETHY has somewhere said: "If our powers should prove deficient, the spirit to make an attempt deserves praise; and in great undertakings it is enough to have shown one's self willing."

It is not always an easy matter to account for incidental convictions, when they run counter to usages and established authority. It is, or should be, however, the result of matured conviction, either founded in fact or such anatomical or physiological evidences as may carry with them a reasonable justification.

Often a slight hint, a seemingly trivial occurrence or circumstance, leads the mind into new channels and to important results. That great propelling power, which now impels almost everything over land and over sea, was first recognized "escaping from the mouth of a tea-kettle." The falling of an apple determined the laws of gravitation; the cackling of a flock of geese determined a great battle; the continued and renewed efforts of a spider to attach its web to a given point infused into a defeated general new hopes, and victory took the place of repeated defeats.

Often a word or a sentence gives color and character to our destiny. It is said that from the doubtful etymology of a single word commenced the sixty years' labor of the renowned Noah Webster; and from thirty languages of Asia and Europe he has produced a work which tinges every sentence in the English language that is fashioned by beauty or strengthened by elegance of diction.

Twenty years ago—pardon the incident, for it is practical and true to life—a valued friend of mine, naturally modest and unassuming, not remarkable for any peculiar talent, but for a good head and heart, a determined, inflexible energy to carry on his part of whatever he might undertake, commenced the practice of medicine in a small town. His competitors were all old men, and good practitioners. His strong attachment for nativity, and the commanding society by which he was surrounded, notwithstanding his offers and inducements elsewhere, caused him to continue his efforts for a time. The difficulties, said he, seemed insuperable, and the long experience and fixed families of his competitors seemed to warn him, at every turn, of his sad prospects. While debating in his own mind where he would pitch his tent, he chanced to pick up the *New York Mirror*, edited by N. P. Willis, and read from the first paragraph his eyes fell upon as follows:—

"When Daniel Webster commenced the practice of law, a friend of his attempted to dissuade him from settling in a certain location, saying the profession was too much crowded there. Webster thoughtfully, but truly, replied: 'I am going above, where the profession is not so much crowded.'"

This single sentence determined his destiny. He did go above, as did the gifted Webster; and now I have the consolation of knowing that few of his age, on either side of the water, have made more decided marks as practitioners or surgeons. But to the subject proper.

The statistics show that in the female the division of the urethra, with or without the operation of lithotrity, lithotripsy, the recto-vesical, or the lateral operations—the latter being performed by commencing the incision at the orifice of the urethra and continuing through the neck of the bladder—carries with them a heavy per cent. as subjects of incontinence of urine. The two former, or one of the two former, is most in acceptance, both in Europe and this country; but as incontinence of urine so often follows these operations, their liability to produce inflammation in the bladder, as a consequence of the crushing, together with the liability to return from remaining fragments in the bladder, an instance of which is given by Mr. H. C. Johnson, (*London Lancet*, vol. i., 1851, p. 355,) where the disease returned two years after the operation, it is not surprising that these facts strike heavily upon our surgical acumen, and carry us back again to the base of the beginning in all surgery, the anatomical character of the part. What is it? and how does it differ from that of the male?

The numerous instances on record of the expansion and dilatability of the gall-duct, where calculi ten times the size of the natural duct are passed; the enormous expansion of the bowel by fecal obstruction, where, according to Gross's Pathological Anatomy, the "colon, duodenum, and ileum measured thirteen inches in circumference, and the quantity of fecal matter amounted to seven gallons," and the enormous dilatation of the vagina during parturition are well known.

The urethra in the female is not so "muscular" as in the male, but shorter and more dilatable; and while in the male, says Mr. Gray, in his late anatomical work, it is surrounded by a dense resisting structure, that of the female admits of "much dilatation." Influenced by these facts, briefly stated, is my only apology for the course pursued in the present case.

The patient was the daughter of Mr. Mitchell, near Foster's Landing, Bracken County, Kentucky. She was brought to Augusta, and on my first visit to her, I found her in one of those paroxysms peculiar to that class of sufferers when attempting to void urine, when stone exists. The body was thrown forward, with the hand pressed convulsively upon the region of the bladder or genital organs. For a moment she would drop upon one or both knees, then upon the nates, up again, and rotate her body laterally and forward, as though in a temporary delirium. From the severity of her suffering, and the constant straining during and for some time after micturition, extensive prolapsus of the bowel existed, as well as excoriation of the genital organs. Her father told me she had been under medical treatment for a long time by different physicians. Lately she had been treated for the "piles," under the supposition that that was the sole cause of her complaint. I told him it was stone, placed her under the influence of chloroform, introduced the sound, and was but a moment in detecting the concretion. Next day, I placed my little patient again under the influence of chloroform, and introduced into the urethra the smallest-sized bougie. Every second day thereafter, I introduced a bougie, increasing the size each time, until the largest size I could procure had been gone through with, always using the chloroform. Upon the withdrawal of the largest-sized bougie, I could easily insert the little finger into the urethra. With the assistance of Dr. Robinson and an old lady, I introduced Cooper's forceps, having a slide upon the outer surface, which allows it to be passed with the blades closed, and which, when drawn back, opens the forceps. In the centre of the instrument is a sound to test the grasping of the stone. After twenty minutes' manipulating, the stone was seized. The slide was firmly shoved down, closing the blades of the forceps over the stone, the sound used to test its security, and an effort made at extraction. The slight, if any, progress made at the first effort, induced me to apprehend I had embraced the wall of the bladder with one or both blades of the forceps. This apprehension I was rejoiced to find to be groundless, by turning the forceps over and over. A gentle but steady traction was then kept up, stopping every few moments and waiting the gradual expansion of the urethra to the desired point. This process being kept up for half an hour, the stone came in view. It seemed wonderful that it had passed any part of the canal, or could advance any more. A little further cessation, and slightly undulating traction, however, brought it up to the external margin of the urethra, but the rigidity there seemed so unyielding that I made a small niche with the point of the scissors, and out it came. The stone measured one inch and three-quarters in circumference.

The next day my little patient had complete control of the bladder, passing her urine at will. She regained her health rapidly, and now, two years since the operation, is perfectly well.

Notwithstanding my unshaken confidence in the power of the urethra, or any organ which opens externally, to yield to remarkable dilatation, yet I confess, if I had known the exact size of the stone, I would have been deterred from attempting its removal, without dividing a portion of the urethra. Now I believe, in the adult female, with care and caution, a stone three inches in circumference might be removed without the use of the knife. Mr. Furguson has extracted a stone of this size, but only by dividing the anterior half of the urethra.

The passive effect obtained over the urethra by the use of chloroform, not only in the preparatory dilatation, but at the time of the operation, is of primary importance, and, if not relaxing in itself, which, from my experience in surgery, is possible, if not probable, it exerts an influence over the entire system, which renders muscular resistance nugatory, and essential.

Bi-Monthly Abstracts;

OR, BI-MONTHLY NOVELTIES IN MEDICAL, PATHOLOGICAL, SURGICAL, OBSTETRICAL, PHYSIOLOGICAL, AND CHEMICAL SCIENCE.

SURGERY.

BY JOHN H. PACKARD, M.D., OF PHILADELPHIA.

I.—*Statistics of Amputation at St. George's Hospital during Seven Years.* By G. F. COOPER and T. HOLMES, formerly Surgical Registrars to the Hospital.

THESE statistics comprise 149 amputations: 76 of the thigh, 40 of the leg, 22 of the arm, and 11 of the forearm. Death ensued in 41, or 27·6 per cent. of the whole number.

Of the 76 thigh cases, 25, or 32·9 per cent., terminated unfavorably; of the 40 leg cases, 13, or 32·5 per cent.; of the 22 arm cases, 3, or 13·7 per cent.; of the 11 forearm cases, all did well.

Amputations of the Thigh.—Of these, 13 were for injury, and the remaining 63 for various other causes. Of the former, 9 were primary, with 5 deaths,—2 from pyæmia, 2 from shock, and 1 from other injury. Two of the 4 secondary operations were unsuccessful, the patients dying of pyæmia. Hence 7, or 53 per cent., of the 13 cases ended fatally.

Fifty-one of the remaining 63 cases are classified as "pathological," with 13 deaths (25·6 per cent.;) 12 as "of expediency," with 5 deaths (41·6 per cent.;) 18, or 28·5 per cent., therefore, in the whole 63. Of the 51, 8 amputations were performed for abscess in the knee-joint; 5 of the patients died,—1 of phthisis and sloughing of the stump, and 4 of pyæmia. Thirty-five were for chronic affections of the knee; of these, 5 died,—2 of pyæmia, as proved by post-mortem examinations; in 2 others pyæmia was indicated by the symptoms during life; 1 from phthisis and sloughing of the stump. Of the remaining 8 cases, 2 were for malignant disease, 2 for gangrene after ligature of the femoral artery, 2 for necrosis, 1 for arterial hæmorrhage in phagedæna, and 1 for necrosis and abscess after excision of the knee; 3 died,—1 of exhaustion, 1 of secondary hæmorrhage, and 1 of pyæmia.

Of the 12 "amputations of expediency," 9 were for tumors, 2 for loss of skin after diffuse cellular inflammation, and 1 for old contraction of the knee with atrophy of the leg; of these, 5 died,—3 of pyæmia, 1 of exhaustion, and 1 of secondary hæmorrhage.

Amputations of the Leg.—Of these 9 were traumatic, 6 being primary and 3 secondary; 4 of the 9 died,—2 from pyæmia, 1 from secondary hæmorrhage, and 1 from exhaustion.

Twenty-seven of the remaining 31 were "pathological," 3 for acute disease of the ankle-joint, with 1 death; 24 for chronic disease of the bones of the foot and leg, with 8 deaths,—4 from pyæmia, 3 from strumous disease of internal organs, and 1 from exhaustion. Of the 4 "amputations of expediency," which all did well, 2 were for painful stump, and 2 for tumors.

Amputations of the Arm.—Of the 22, 14 were for disease, with 2 deaths; 8 for accident, 6 primary, with 1 death, and 2 secondary. Ten of the 14 were for disease of the bones or of the elbow-joint; 3 of the remaining 4 were on account of the effects of burn, and 1 (at the shoulder) for malignant tumor of the humerus. All the deaths were from pyæmia.

Amputations of the Forearm.—These were 11 in number, 4 primary, (probably for injury,) 6 for disease of the hand, and 1 for a tumor. They all ended favorably.

REMARKS.—The reporters adopt, as has been seen, the classification employed by Mr. Bryant in a paper in vol. xlii of the Medico-Chirurgical Transactions; they, however, object to it as somewhat arbitrary. The "pathological" amputations amount to 94, of which 24, or 25·5 per cent., died; amputations "of expediency" to 21, of which 5 died, or 23·8 per cent.; primary amputations to 25, of which 9, or 36 per cent., died; and secondary to 9, of which 3, or 33·3 per cent., died. These figures, so far as they go, do not bear out Mr. Bryant's statement, that amputations "of expediency" are much more fatal than "pathological," and secondary than primary. But the list is not long enough to justify any very positive deductions.

Comparative Mortality of Circular and Flap Operations.—Of the 149 operations included in the table, 46 were by the flap method, and 97 by the circular; 3 were not noted as to this particular, and 3 by Syme's method are not counted. Of 74 amputations of the thigh, 52 were circular, 15 of which died, showing a mortality of 28·8 per cent.; 22 were flap, and 10 died, showing a mortality of 45·4 per cent.

The shortest period between the operation and the patient's discharge from the hospital was, in the circular, 23 days, and in the flap 24; the longest, in the circular 126, and the flap 105 days; the average period of cure in the circular 60 days, and in the flap 42.

Of 37 amputations of the leg, 21 were circular, of which 3 died,—a mortality of 14·2 per cent.; 16 were flap, and 8 died,—a mortality of 50 per cent. With respect to the period of their stay in the hospital, the shortest period was in the circular operations 19, and in the flap 20 days; the longest, in the circular 120 days, and in the flap 94; the average, in the former 49, and the latter 49 days.

Of 22 amputations of the arm, 17 were circular, of which 2 died,—a mortality of 11·8 per cent.; 5 were flap, of which 1 died,—a mortality of 20 per cent. The shortest period in hospital was, in the former 20, in the latter 26 days; the longest, in the former 96, in the latter 70 days; the average, in the former 41 days, in the latter 51.

Of 10 amputations of the forearm, 7 were circular and 3 flap; none died. The shortest time in hospital was, in the former class 20, in the latter 17 days; the longest, in the former 142, in the latter 50; the average of the former 44, of the latter 29 days.

Hence it appears that out of 97 circular amputations of all kinds, 20 died,—a mortality of 20·6 per cent.; while out of 41 flap 19 died,—a mortality of 41·3 per cent., or just double that of the circular; and this excess of mortality of the flap over the circular prevailed in all classes of amputations. More extensive data would, however, be required to warrant any conclusion in regard to this.

Influence of Sex.—Of the 149 patients, 118 were males, and 31 females. The mortality was 34, or 28·8 per cent., of the former, and 7, or 21·9 per cent., of the latter. In view of the facts that males are far more frequently subjected to traumatic amputations than females, (32 to 2 in the foregoing list,) and that these are more dangerous than those for disease, we may perhaps infer that females bear the operation worse than males.

Influence of Age.—It would seem that the greatest success attends amputation in those below 15 years of age, the least in those between 25 and 60; above this latter age we have not sufficient data.

Causes of Death.—The total number of deaths was 41; the assigned causes as follows: Pyæmia in 24 cases, or 58·5 per cent.; exhaustion (without hæmorrhage) in 7, or 17 per cent.; exhaustion, with secondary hæmorrhage, 4, or 9·7 per cent.; visceral disease, in 4, or 9·7 per cent.; diffuse inflammation and gangrene, in 1, or 2·4 per cent.; other injuries, in 1, or 2·4 per cent.; in 9 cases no post-mortem examinations were made.—(*Medical Times and Gazette*, April 6, 1861.)

II.—*On Cases of Recovery from Traumatic Tetanus.* By MR. JONATHAN HUTCHINSON.

Mr. Hutchinson has collected in a tabular form the London hospital reports of cases of this kind, in order to facilitate their comparison. He refers to a previous series, having special reference to the prognosis and treatment of the disease, upon which some general remarks may be found in the *Medical Times and Gazette* for June 17, 1854. We must be content here with presenting Mr. Hutchinson's comments merely.

In his table, most of the cases show an unusually long interval between the receipt of the injury and the invasion of tetanic symptoms; seldom less than ten days, and generally much over that time. "Those in which it was shorter are, for the most part, precisely those in which there is reason to doubt whether the disease was really excited by the asserted injury or not. As it regards cases in which tetanic symptoms supervene in a well-marked form within ten days of a *bonâ fide* injury, there is as yet but little evidence of a hopeful nature on record. The longer the interval (or period of incubation) the better the prognosis. Among other circumstances and symptoms of good omen, we may briefly mention the following, which we place in the order of their estimated value: 1. If the symptoms develop themselves slowly. 2. If there is little or no tendency to pharyngeal spasm. 3. If the pulse does not become greatly quickened. 4. If the skin remains cool and the bowels respond to mild purgatives."

The table shows success with very various plans of treatment. Mr. Hutchinson sums up his conclusions from these and other cases as follows:—

"1. The chief objects in view are three: to mitigate the force of the local irritation to which the disease is due; to sustain the patient's strength by food;

and lastly, by procuring sleep, to allow the nervous system an opportunity of regaining its wasted powers.

"2. If the case be seen in the very onset, and if the injured part be a finger or toe, it is desirable at once to amputate, whatever may be the local condition. If the injury has been severe, and the part has passed into a state in which, whether from sloughing or otherwise, its recovery is doubtful, it is desirable to amputate at any stage of the disease, or even if one of the extremities be the part involved.

"3. The injured part should be poulticed, and the limb above it wrapped in lint soaked in laudanum or chloroform.

"4. The patient should be put in a room with but one attendant, and the strictest quietude should be insisted on.

"5. If the patient has been accustomed to it, he should be allowed to smoke.

"6. The bowels should be well cleared out by croton oil or other efficient purgative.

"7. If the skin be very hot, the pulse jerking, and the tongue red and dryish, the surgeon may be justified in combining small doses of calomel with the narcotic he may have selected for employment.

"8. A free allowance of beef-tea, milk, eggs, and similar articles of concentrated fluid nutriment should be given, more especially in the later stages of the complaint.

"9. As long as the patient is able to take food and to obtain periods of comparative quiet and freedom from pain, the use of anæsthetic inhalations is not desirable. Great advantages may, however, be obtained from them if he be unable to open the jaw sufficiently to admit of taking food, or if the tetanic spasms are without remission. Ether appears to have stronger facts in its recommendation than chloroform.

"10. One or other form of narcotic—opium, Indian hemp, belladonna, or woorara—should be freely used. There is no very decisive evidence as to the advantage of any one of these over the others. Respecting the Indian hemp and the woorara, the difficulty often encountered in obtaining them in a state of reliable activity will often be an obstacle to their employment.

"11. Excepting possibly in the per-acute cases, the free use of quinine appears to be desirable. If given in large doses it generally reduces the frequency of the pulse, and in some cases a mitigation of the tendency to spasm has attended its influence. The rapid induction of cinchonism is a measure well worthy of a fair trial."—(*Medical Times and Gazette*, April 6, 1861.)

III.—*On Pyœmia.* By PROF. ROSER, of Marburg.

The following observations form a brief abstract of some papers on this subject, by the above-named author.

The Specific Nature of the Disease.—We are indebted to the obstetrician rather than to the surgeon for any progress which has been made in our knowledge of pyæmia, he having established the miasmatic character of the pyæmia of puerperal women, and its identity with the pyæmia of the wounded. The doctrine of "Surgical Fever," so ably expounded by Simpson, has, however, made but little way in Germany, Virchow's views on thrombosis there predominating, as the doctrine of phlebitis formerly did in France. Professor Roser shows that neither Hunter's theory of phlebitis, Rokitansky's disease of the blood-vessels, nor Virchow's thrombosis afford any sufficient explanation of pyæmia, conditions being assigned as causes, which are mere concomitants or effects. The attempt to explain its occurrence by the fact of the absorption of ill-conditioned pus also fails; for, although various analogous circumstances are producible by such absorption, these differ much from those of pyæmia, and may be exposed by the word septæmia. The two conditions may, indeed, be combined, and we may have a septic pyæmia, just as we may have a septic variola or scarlatina. If pyæmia be followed out through its various modes of manifestation, it will be found to exhibit a marked similarity to typhus and other zymoses; and just as in the case of these zymoses, while sometimes it appears epidemically, and as the result of contagion, at others it arises spontaneously, without the prior presence of pus. This fact has long been known in lying-in hospitals, and careful observation will easily detect similar cases in surgical wards. Stromeyer has observed a whole series of such cases, and similar ones have come under the author's notice. The explanation of the occurrence of sporadic cases of pyæmia may be difficult, but it is no more so than is the explanation of sporadic typhus or cholera, or other zymoses.

Forms of Pyæmia.—Professor Roser confines his attention to some of these which have attracted but little notice. 1. *Pyæmic Febricula:* Just as during the prevalence of typhus, we find patients here and there exhibiting but slight symptoms, so in hospitals infected with pyæmia, a mild form of the disease is observable which may be termed febricula. It has been but little noticed, as was indeed to be expected, by those who were on the look-out for phlebitis, sepsis, or thrombosis, as the initial phenomenon of pyæmia; but the author instances cases in his own and in Stromeyer's practice. In lying-in hospitals the febricula is termed "milk fever"—a term of doubtful propriety, seeing that the affection is observed sometimes in almost all the inmates, and at others in none of them. 2. *Pyæmic Erysipelas:* When, in a patient suffering from pyæmia, erysipelas appears, the natural conclusion is that the pyæmic blood-disease has localized itself in the skin, just as it might have done in the pleura or in a joint. When, however, in a subject of erysipelas symptoms of pyæmia appear, the question may arise, whether during the erysipelas the blood-poison has been developed, whether the pyæmia has become added as a second special process of disease, or whether the erysipelas itself was only the first manifestation of the pyæmic condition. Lastly, erysipelas and pyæmia may coexist, and although they may not often be met with in the same patient, they are frequently found prevailing among different patients in the same ward. The author's conclusion is, that hospital erysipelas is a consequence of pyæmic infection, and its localization in the skin, although he admits that it is doubtful whether another variety of blood-poison may not also give rise to it. 3. *Pyæmic Diarrhœa:* This affection, well known to clinical observers, has obtained but little notice in hand-books. There are cases in which no other symptom except the diarrhœa is present, but the author still regards these as pyæmic, occurring as they do simultaneously with other cases in which the diarrhœa has only been the first of the whole series of symptoms. When this diarrhœa is combined with the pyæmic erysipelas, the disease exhibits striking and rapid contagious properties; and in hospitals in which precautions against contagion are not taken, this hospital epidemic diarrhœa, though little spoken of, is of frequent occurrence.

Therapeutics.—Although the incurability of pyæmia is no longer believed in, practitioners in general are not aware of the number of recoveries which really do take place; and that even when excluding the slighter cases above alluded to, and admitting only examples of well-marked pyæmia. The number of recoveries has increased in proportion as the essential conditions of fresh air and a good diet have been appreciated. Supporting the patient's strength by means of wine, has replaced the former mischievous antiphlogistic treatment; and, indeed, judging from the use made of alcohol in England, there is danger of the opposite extreme being fallen into. Quinine, though usually of no great utility, may in some cases be a valuable adjuvant; and morphia is an invaluable remedy, serving not only to check diarrhœa, abate pain, and diminish danger of peritonitis, etc., but also to tranquilize the excited and delirious patient. The most important agent in the treatment, however, is a frequent renewal of fresh air, and the removal of all objects likely to pollute it.

Prophylactics.—Under this head the author lays great stress upon simplicity in dressing wounds, observation of the strictest cleanliness, and checking the decomposition of pus by cold and chlorine applications. When the spread of pyæmia is to be guarded against, instruments and nursing appliances should not be used in common, no autopsy should be performed by those attending on the sick, and the surgeon, visiting his cases of pyæmia last, should change and ventilate his clothes before seeing other patients. In all cases of ill-conditioned suppuration at Marburg, weak chlorinated water is employed, and after waiting on such patients, the nurses carefully wash their hands in the same fluid. Finally, Dr. Roser protests against the erecting of hospitals with large surgical wards, unaccompanied by means for isolating the subjects of pyæmia. Small hospitals, of even a very faulty construction, give rise sometimes to a less mortality than some magnificent structures in which the patients are assembled together in large numbers.

Juridical Relations.—Under this head the author discusses the question which may come before the surgeon in a court of law, viz.: whether a fatal pyæmia following an injury not in itself necessarily fatal, should be regarded as an essential condition of such injury, or as an accidental and superadded circumstance; the exact determination of this point modifying in the German courts the amount of punishment to be awarded. He cites cases in which the pyæmic complication has been altogether overlooked, or has been wrongly interpreted, to the detriment of the accused. He refers also to two other conditions to which the same considerations apply, viz.: diffuse inflammation and tetanus. Diffused inflammation, after wounds of tendons, etc., so often observed in hospital, and so seldom in private practice, should not be attributed to the nature of the local injury, but to the presence of miasmata. In fact, it is of a pyæmic nature. With respect to tetanus, we know nothing concerning its causal connection with wounds, and when questioned juridically, we should avow such ignorance. The author himself is disposed to regard it as a zymotic affection, not only because no causal connection with the wound can be made out, but from its analogy to hydrophobia, which is a zymotic affection, and from its disposition to prevail as an epidemic or endemic.—(*Brit. and For. Med.-Chir. Review*, April, 1861; from the *Archiv für Heilkunde*, Jahrg. i.)

IV.—*On the Relative Safety and Efficiency of Ether and Chloroform as Anæsthetics.* By FREDERICK D. LENTE, M.D., of Cold Spring, N. Y.

Dr. Lente refers to some statistics published a few years ago by Dr. Kidd, of London, from which it might be inferred that ether was quite as dangerous an article as chloroform. This idea, however, is not borne out upon a careful examination of the data; and it will not probably commend itself to any one much in the habit of administering ether. Hospital experience, civil and military, has furnished no recorded instance of death from this anæsthetic; the French authorities seem even to differ as to the results of the observations of the army surgeons in the Crimean war, with regard to the danger from chloroform. Physiological experimenters have noted that animals are much oftener fatally affected by chloroform than by ether. Moreover, when evil effects do manifiest themselves, those from the latter agent are much more manageable than those from the former.

Dr. Lente suggests one important idea, viz.: that the mixture of chloroform with ether only augments the danger, by diminishing the caution of those who administer the anæsthetic, while the greater volatility of the ether causes it to evaporate so fast that the chloroform may be left nearly pure for inhalation.

He advises the giving of ether with *as little admixture of atmospheric air as possible,* in order that it may take effect quickly and without waste; averring that this plan adds nothing to the risk. All draughts of air should, in his opinion, be excluded, as delaying the induction of the desired state, which should be brought about, he thinks, in five or six minutes in adults, and in a much less time in children.—(*American Journal of the Med. Sciences*, April, 1861.)

V.—*Removal of a Ball by means of the Trephine, Twenty-two Months after its Penetration into the Cranium.* By M. JOBERT.

Jules Gustin, aged twenty-one, was admitted into the Hôtel-Dieu, on the 19th of February, 1857. Forming one of a force posted in front of the Malakoff tower, April 8th, 1855, he was struck by a ball in the forehead, the projectile, prior to penetrating the cranium, having come in contact with the external surface of the vizor, leaving a semilunar depression as it passed over the edge of this. The man immediately fell from the parapet into the trench, a depth of seven feet, and remained unconscious in the ambulance for twenty-four hours. At the end of a week he was sent to the military hospital at Constantinople, where he stayed during four months. He then requested permission to return to the Crimea, and did so, in spite of the suppuration, which had never ceased. He fought at Traktir, August 16th, 1855, and returning to Paris, in December, he remained for six months longer in the regiment. He was, however, unfitted for active service, being obliged to pass a considerable time in hospital. The symptoms continued much the same from the first, and consisted in a sensation of heaviness of the head, an uncertainty in the attitudes, and a feeling, when stooping, as if the forehead were separating from the head, suppuration always persisting.

On his admission into the Hôtel-Dieu, a clean, circular aperture, about the size of a franc, was observed in the centre of the forehead. Passing the finger around the circumference of the opening, "osseous granulations, partial ossifications formed by the periosteum," could be felt, and on the introduction of a probe to the bottom, a hard, resisting, metallic body was recognized. After a crucial incision had been made, the aperture caused by the ball being found too small to admit of its extraction, a circle of bone was removed by means of the trephine. The ball was now extracted, and some hard, blackish blood-clots removed. The movements of elevation and depression of the dura mater, isochronous with the pulse, were plainly perceptible. The projectile proved to be a leaden ball weighing 25 grammes (375 grains.) Its surface was smooth and spherical over only a small portion of its extent, the remainder being rough and irregular. The details of the recovery need not be pursued, it sufficing to say that this was complete, the man having been seen in perfect health as late as October, 1860.

M. Jobert calls attention to the fact of the ball having remained for so long a period in contact with the dura mater without inducing any inflammatory action. He also lays stress upon the circumstance of his having, after the completion of the operation, introduced the flaps formed by the crucial incision into the accidental opening. To this he attributes the non-occurrence of necrosis or osseous exfoliation usually observed after trephine operations, when the parts are exposed to the air. Here, such exposure was prevented, immediate union of the raw flaps with the bleeding osseous surface being secured. The isochronous pulsations continued for a time visible, but they became more and more obscure as the tissues covering the aperture augmented in thickness.—(*Brit. and For. Med.-Chir. Review;* from the *Comptes Rendus,* 1861, No. 6.)

VI.—*Exostosis of the Left Transverse Process of the Seventh Cervical Vertebra, surrounded by Blood-vessels and Nerves; Successful Removal.* By Mr. Coote.

This tumor, which occurred in the person of a servant girl, aged twenty-six years, had been growing since her infancy, and was about the size of a large walnut; it pushed the subclavian artery forward, and caused pain in the arm and elbow; pulsation was wanting at the left wrist. The girl was otherwise in good health when she applied for treatment at St. Bartholomew's Hospital.

Upon consultation, the removal of the growth was decided to be advisable; and the girl having been placed under the influence of chloroform, the operation was performed without difficulty, although of course with caution. Mr. Coote found the tumor, which he regards as a development of a cervical rib, to be attached to the first dorsal rib also; and was obliged to take away the mass in separate portions.

The case subsequently did well.—(*Lancet,* April 13, 1861.)

VII.—*A Case of Gunshot Wound, the Ball being found in the Substance of the Wall of the Heart, Eighteen Years afterward.* By G. B. BALCH, M.D.

In June, 1842, a boy named John Kelly received a ball in his right shoulder. This ball had passed through three inch-boards before it struck him; it entered through the border of the trapezius muscle, an inch and a half or two inches from the acromion process, and a surgeon who was called found it lodged behind the inner third of the clavicle, but was unwilling to attempt its extraction. In six weeks the boy was at work again.

Four years afterward he had a dangerous attack of pneumonia, with severe and irregular palpitation of the heart; and from that time symptoms of organic disease of the heart were always present.

Strabismus, and sometimes inflammation of the right eye, existed from the time of the accident to that of his death, which took place in June, 1860, as the immediate result of cold taken in bathing. During his last illness, he had severe cardiac disturbance, dysphonia, and pains in the shoulders and arms. His right arm became purple and cold.

At the autopsy, "the right subclavian artery was filled with ossific matter at the thyroid axis; the other arteries were healthy. The right internal jugular and subclavian veins were enlarged; the right external jugular was closed near its union with the internal. The upper lobe of the right lung was congested. There were no tubercles in the lungs, but there was considerable pleuritic adhesion. The heart was enlarged, and undergoing fatty degeneration. The pericardium was very adherent; so much so that I could not separate it from the heart, without cutting either one or the other. At the lower part of the right ventricle I felt a hard lump. I passed my finger into the right ventricle, and found the lump to be in the wall of the ventricle, near its lower part. When cut with my scalpel from the outside down upon the lump, I found it to be a leaden bullet, slightly flattened."—(*Glasgow Medical Journal*, April, 1861; from the *American Medical Monthly*, September, 1860.)

VIII.—*On Gunshot Wounds produced during the Loading of Artillery.* By DR. CORTESE.

Dr. Cortes having related five cases of gunshot wounds received by artillery-men while loading their guns, and pointed out the peculiar severity of such injuries, thus sums up his subject: 1. No other blow of a projectile imparts so great an amount of commotion to the entire limb. The state of muscular contraction prevailing at the time constitutes a kind of solidarity between the hand, forearm, and arm, which is the chief and necessary cause of this commotion. 2. This circumstance compels the surgeon to direct his attention to the entire limb, whatever amount of lesion may be manifest in the hand. A neglect of this precept may lead to gangrene gaining possession of a large portion of the limb, or to a generalized suppuration, while a diminished power of reaction in the injured parts may give rise to purulent infection, or render amputation useless. 3. In all those cases in which the hand is severely torn, its disarticulation, or even the amputation of the forearm, is insufficient to secure recovery. The surgeon's knife penetrates into infiltrated tissues, more or less destroyed in their intimate structure in consequence of the concussion they have been subjected to. So that independently of the fracture of the bone, and of the possible disjunction of the articulations of the ulna, the success of the reparative process would be very problematical. In such cases the arm should be amputated. 4. The sooner amputation is performed, the greater is the probability of a favorable result. 5. The rapid and very extensive tumefaction of the limb constitutes a sufficiently certain criterion of the severity of the derangements which are propagated along its whole extent. When fractures are not detected in the diaphysis of the bone, some lesion of contiguity or continuity in the ulnar articulation must be suspected. 6. When the lesion does not seem severe enough to call at once for amputation, we must always be prepared for secondary occurrences which will unfit the limb for its functions. (In two of the author's cases paralysis of the limb remained.) Still, conservative treatment should in such cases be attempted.—(*Brit. and For. Med.-Chir. Review*, April, 1861; from *Omodei Annali Universali di Medicina*, vol. clxxiv.)

IX.—*On Resection of the Hip-joint in Cases of Coxalgia and of Gunshot Wounds.* By M. LEFORT. (Paper read at the *Académie de Médecine*, Paris.)

The author sums up his paper as follows:—

In view of all the indications and contra-indications of resection of the hip-joint, we may say that it should not be considered as a mode of treatment in coxalgia; it is an exceptional operation, which may and should be performed in grave cases only, where, whether from the extent of the local lesion, or from the impairment of the general health induced by this, the patient's life is seriously compromised, and ordinary measures afford little or no hope of a cure. It is for the surgeon to decide in each case as to the propriety of the operation; absolute rules cannot be laid down.

Coxalgia, when unaccompanied by abscess and caries, when it preserves the form which may be called fungous arthritis, does not call for resection. Prolonged rest, with appropriate general and local treatment, quite frequently effect a cure. The anchylosis which occurs in such cases does not prevent the limb from being of use in walking, if only care has been taken to keep it in a straight position.

There may be ground for doubt as to the propriety of the operation in cases where there is abscess in the joint. The affection is apt then to be of long continuance; openings occur at different points near the articulation, giving exit to a sero-purulent discharge, which, by its nature and its abundance, exhausts the patient.

Almost always, there is a spontaneous luxation; if a cure is obtained before the bones are seriously affected, it is but tardy, and leaves the limb shrunken, deformed, often flexed upon the pelvis, and too short to be useful in walking, so that crutches are necessary. But although in this form of disease the erosion and destruction of the cartilages have almost always determined alterations in the bone, at least in the rim of the cotyloid cavity, resection is not indicated unless the patient's life is seriously threatened.

But if abundant suppuration, and a prolonged confinement in bed have so reduced the strength that the system seems unequal to the task of expelling and making up for the carious or necrosed portions of bone; if the patient's life is in danger; if the bones are affected to a sufficiently great extent; if, above all, spontaneous luxation has taken place, resection is fairly indicated. The enlargement of the cotyloid cavity, so far from being a contra-indication, makes the operation necessary, for by permitting the removal of the carious portions of the ilium, it enables us to check the progress of the malady, and to prevent the formation of abscesses around the pelvis, which are so apt to destroy life.

But doubt often exists as to the extent of the deep-seated disease; the irregularity of the fistulous passages prevents the probe from reaching the bone so as to detect the caries with certainty. It is then that a sort of exploratory operation, often practiced in cases for resection, may be usefully resorted to. The abscesses are freely opened; contiguous or even distant sinuses are laid into one, so that the affected parts may be rendered more easily accessible. If caries does not exist, this operation makes matters no worse; if it does, resections may be intelligently practiced, without fear of subjecting the patient to unnecessary dangers by a rash operation. Resection may be performed even for a necrosis of small extent, and although a spontaneous cure is possible, if the limb has been kept in such a position that its deformity would render walking, even with crutches, a matter of difficulty.—(*Gazette Médicale de Paris*, December 8, 1860.)

X.—*Case of Popliteal Aneurism cured by Forcible Flexion.* By AUGUSTIN PRICHARD, ESQ., Surgeon, Bristol.

John Gough, aged thirty-four, came under Mr. Prichard's care at the Bristol Royal Infirmary, for a pulsating tumor of the left ham, which had existed rather more than two months. The swelling was large enough to cause bulging of the muscles at the inner side of the knee, its transverse diameter being greater than its vertical; its pulsations were very marked, and the leg œdematous, weak, and painful.

It was easy, by means of a leather anklet, with a band attached, to flex the leg strongly upon the thigh, and thus to check the current of blood through the aneurism; but the swelling was so great that this position soon became irksome, and therefore a tourniquet was applied, to be tightened whenever the patient found himself obliged to straighten the knee. By this means an absolute cure was effected in twenty-five days, and although there was some little difficulty at first in overcoming the contraction of the soft parts around the joint, it was soon done away with, and the limb became perfectly sound and serviceable.—(*British Medical Journal*, March 30, 1861.)

XI.—*Fracture of Patella treated successfully by means of Malgaigne's Hooks.* By DR. PACKARD, of Philadelphia.

This case was one of simple transverse fracture, the lower fragment being very small; the patient could not give an exact account of the injury, but she missed a step in going down stairs, and did not know of her having sustained any blow on the part. The hooks were inserted on the eighth day of the treatment, and retained in place for thirty-one days; they excited no inflammation, and caused no pain whatever after the first few hours. A perfect cure was obtained, so that the patient was able to walk in the street in nine weeks.

This apparently formidable, but really innocent and useful instrument, is made and employed as follows: It is composed of two plates of steel, three-quarters of an inch in width and not quite one-eighth of an inch in thickness. Each of these plates is at one extremity recurved downward into two very sharp hooks an inch and a half long, the points of which are parallel with the plates themselves. The upper plate is two inches and a half in length before the curve of the hooks becomes decided; the lower one is shorter than this by an inch. Projecting up from the lower plate, about three-eighths of an inch from the notch between the hooks, is an upright, which runs in a slit rather more than an inch and a half long in the upper plate; at the extremity of this slit is another upright, fixed in the upper plate, and these two uprights are pierced by a screw which runs parallel to the plates, forcing them, and therefore the points of the hooks, together. The screw is squared at one end, so as to be turned by means of a key.

The lower pair of hooks are to be inserted first, the skin being drawn slightly downward; they should catch the edge of the tip of the lower fragment on either side of the ligamentum patellæ. Next the upper plate is slipped on to the lower, (which is turned up for the purpose,) and its hooks forced in so as to pierce the skin at right angles, and engage the points in the upper edge of the upper fragment of the bone. The screw is now passed through the uprights, and turned until the fragments are brought as firmly together as may seem safe. When screwed home, the opposing points are rather less than an inch and a half apart.—(*American Journal of the Medical Sciences,* April, 1861.)

XII.—*On the Reproduction of Necrosed Bones after Resection.* By M. MAISONNEUVE.

M. Maisonneuve is said to have laid before the Academy of Sciences, at its last meeting, the notes of an interesting case of conservative surgery. In the month of August, 1855, a young man consulted this practitioner in regard to an extensive necrosis of the tibia of the right leg. The limb presented a deplorable aspect, being triple its natural size, and furrowed by deep ulcers, through which the bone could be perceived to be necrosed during its entire length. The disease had commenced after a fall, which occurred two years previously, and the excessive suppuration had occasioned such constitutional disturbance as to threaten life. The most eminent surgical authorities of Paris had declared that only amputation of the thigh could save life, and that the limb itself was beyond hope. M. Maisonneuve determined, however, to test the powers of the periosteum for repair, by performing a sub-periosteal resection of the entire tibia; and the patient readily consenting, this course was at once adopted. Chloroform having been given, an incision fourteen inches in length was made in the periosteum, and the necrosed mass, which did not involve the articular faces of the bone, was removed entire. The wound healed kindly, and by the fortieth day the patient was able to walk, with the aid of crutches. Eventually, the whole bone was reproduced, so that the leg differs from its fellow in no respect except in the cicatrix along its anterior surface.—(*Paris Correspondence of the London Lancet*, April 6, 1861.)

[We have quoted this case because so far as we know it is the first, and it certainly is the most successful, case reported of the application on a large scale of our knowledge of the regenerative powers of the periosteum. If the account be not too highly colored, the result was favorable in a most extraordinary degree.—P.]

XIII.—*On the Means for Preventing Caries of the Petrous Bone and the Formation of Abscess in the Brain, in Cases of Disease within the Ear.* By JOSEPH TOYNBEE, F.R.S. (Medical Times and Gazette, March 16th, 1861.)

When matter is pent up in one of the cavities of the ear, it gives rise to disease of the petrous portion of the temporal bone, and the formation of an abscess in the brain. Some years ago Mr. Toynbee advanced the opinion, which has since been borne out by numerous observations, that the cerebrum was the seat of the abscess when pus was confined in the tympanum; when pent up in the mastoid cells, the cerebellum was affected, and when in the vestibule, the pons varolii and the base of the brain were involved. These cases are very insidious in their progress, and it is, therefore, highly important to prevent the collection of matter, and to remove it when once formed. If, however, the case has progressed so far that neither of these measures can be adopted, our duty is to endeavor to prevent the disease advancing to the brain.

When the tympanum is affected, and its membrane has been entirely or partly destroyed, the case is most manageable, the removal of the discharge being insured by syringing with warm water. The use of the syringe must be persevered in as long as there is any discharge from the ear, inasmuch as it is liable to become inspissated, and thus offer an impediment to its own free escape. The mucous membrane of the tympanum, which furnishes the pus, is, at the same time, to be treated by local and general measures, and when its condition is ameliorated, there is no longer fear of disease in the petrous bone.

The case is rendered much more serious when matter is pent up in the tympanum or mastoid cells, without any opening in the membrane of the tympanum. In either of these cases an operation to establish an orifice in the drum is not to be thought of, as inflammation of the dura mater may be lighted up. The best means of averting mischief to the bone, and thus preventing implication of the brain or its membranes, is by the use of an issue or a seton; and in his work, "On the Diseases of the Ear," Mr. Toynbee cites a case in which the patient had symptoms of matter in the mastoid cells, and who was cured by the introduction of a seton. If pus is pent up in the mastoid cells, and the membrane of the tympanum be absent, a curved probe may be passed into the natural passage into the tympanum, and thus exit for the matter will be afforded; but the mucous membrane is usually so much thickened that the above means will fail to reach and release the pus.

PATHOLOGY AND PRACTICE OF MEDICINE.

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I.—*The Confounding of Persons as a Symptom of Insanity.* By DR. SNELL. (From the "Allgemeine Zeitschrift für Psychiatrie," Band xvii., ss. 545, 554. Translated for the "Medical Critic and Psychological Journal," London, April, 1861.)

Dr. Snell, Director of the Asylum at Hildesheim, has, for several years past, devoted much attention to the consideration of the confounding of persons as a symptom of insanity. It is most frequently met with in mania, (its absence here, indeed, being exceptional,) next in dementia following mania, and accompanied by excitement, not rarely in recent melancholia, and in all forms of melancholia accompanied by excitement, and in the various forms of monomania and apathetic dementia. It prevailed in more than half of the cases on admission into his asylum, and in only a third of those who have resided there for some time. It is more observable in proportion as the delirium is more general, and is of frequent occurrence in the delirious fever of acute diseases, as pneumonia and typhus.

Independently of illusions and hallucinations, the remarkable disposition which the insane have to confound objects seems to have a fundamental relation to a general psychological law, viz., the incapability of the insane to do other than move within the accustomed circle of thought; the patient, transporting his former perceptions direct to new objects, and confounding the one with the other, being far too much occupied with himself to adapt new ideas, derived from the outer world, to his old ideas. He is unable to comprehend his changed condition, either as regards the past or the future.

The paper terminates with the following conclusions:—

1. The confounding of persons, places, and objects is one of the most frequent symptoms of insanity. 2. It is one of the most certain and most easily detected symptoms of psychical disturbance. 3. It is proportionate to the degree and general character of the mental excitement, and is usually a favorable prognostic sign. 4. It is most frequently observed in cases of recent occurrence. 5. In the passage of the primary forms of psychoses into the so-called secondary forms, the confounding of persons not unfrequently disappears, and its doing so is here an unfavorable sign. 6. In the passage of the primary forms of mental disturbance into recovery, such disappearance is one of the most certain tests of recovery.

II.—*The Influence of Change of Posture on the Characters of Endocardial Murmurs; with an attempt to explain the Cause.* By SIDNEY RINGER, Esq., Medical Registrar to the Children's Hospital, London.

After a careful examination of a large number of mitral regurgitant, aortic obstructive and regurgitant murmurs, and one case of mitral obstruction, Mr.

Ringer found the following general proposition to hold good: Endocardial murmurs are louder, harsher, and lower pitched in the lying than in the sitting or standing posture. With the exception of one case of aortic obstructive disease, and one case of mitral regurgitation and aortic obstruction, this was found to hold universally good.

These variations can be caused either by some alteration in the valves or part causing the murmur, or by some alteration in the force of the blood, probably the latter. It is well known that the frequency of the pulsations of the heart is increased in the sitting over the lying, and the standing over the sitting posture. This increased frequency is accompanied with a diminution in the force of the heart's contractions. Moreover, the diminution in force is in proportion to the increased frequency.

Patients with visible and tortuous arteries were examined in the different postures, when, in every case, the visibility with each impulse of the heart was decidedly less in the standing than in the sitting or lying postures. It may be objected to this, that visible arteries occur mostly in persons suffering from aortic regurgitant disease, and that, as gravitation would act more strongly in the sitting than in the lying posture, more blood would flow back into the heart; consequently less would be propelled, and the visibility would be diminished. But the same diminution in the visibility of the artery occurred in patients who were free from aortic disease. Moreover, in those cases in which aortic regurgitation occurred, there was found to be a diminution of the visibility of the pulse in the standing over the sitting posture, in both of which postures the effects of gravitation are the same on the heart. It is thus probable that the rapidity of the circulation is much the same in all the different postures.

Having thus proved that the increased frequency and force of the heart are somewhat in inverse proportion, the author attempts to show the connection between the frequency of the heart's impulse and the alterations in the characters of endocardial murmurs above described.

1. In a case presenting both mitral regurgitant and aortic obstructive murmur, the pulse was the same in frequency in both the sitting and lying postures: the murmurs were found to be the same in both cases.

2. In cases in which the difference in both the pulse and murmurs were well marked, the murmurs were occasionally found unaffected by position. At these times the pulse was found to be equally unaffected by position.

3. On making those patients who had the difference in both murmurs and pulse well marked exert themselves, so that their pulse was unaffected by position, it was found that their murmurs were equally unaffected.

4. Patients, especially children, were occasionally nervous and frightened at the examination. In these both the pulse and murmurs were unaffected by change of posture; but, as their confidence became restored, the difference in the pulse manifested itself, and *pari passu* the murmurs also became affected by altered position.

5. In changing from one posture to the other, the alteration in frequency of the pulse gradually and not instantaneously manifested itself. So, likewise, the alteration in the murmurs became gradually manifest.

The murmurs accompanying femoral aneurisms were found to be similarly affected by a change of posture. The alteration in the intensity of cardiac murmurs by a change of posture is often very great; it appears to affect mitral murmurs more than aortic.

Mitral murmurs are not of the same intensity nor pitch at the commencement and termination of the systole. Thus they increase in intensity, and become heightened to their very termination. Can this increase be due to the rotation of the heart, by which its mitral orifice is brought more anteriorly? It is difficult to conceive this possible. However, it may be stated that, when the murmur is listened to posteriorly, the commencement of the murmur is most intense and highest pitched, the very reverse of what is heard in front; which would be expected, as the mitral orifice would be carried away from the posterior part of the spine.

May it be due to the heart being contracted, and consequently smaller, when the mitral orifice would be brought more anterior? or are both combined? If the alteration be due to the rotation of the heart, then tricuspid murmurs should be the reverse of mitral; namely, most intense at their commencement. But tricuspid murmurs are often so covered with pulmonary rhonchi, that it is extremely difficult to listen attentively to them.

The rest of the paper is devoted to the subject of the generation of murmurs, and to the description of experiments made to determine their causes.

III.—*Temporary Paralysis of the Ciliary Muscle of the Eye.* Four Cases; perfect Recovery. By GEORGE LAWSON, ESQ., F.R.C.S., Surgeon to the Great Northern Hospital, London. (Lancet, May 11, 1861, p. 458.)

The accommodation of the eye being performed through the agency of the ciliary muscle, any sudden loss of the power of adjusting the eye for near objects occurring in an eye which has always had normal vision, must depend on some impairment in the function of this muscle, which may be either partially or entirely paralyzed. From the few cases which have fallen under the observation of Mr. Lawson, this affection appears generally to come on either during a severe illness, or else, as is more frequently the case, is first discovered by the patient during the period of convalescence, when, on attempting to read, he finds that the lines appear misty, and that he is unable to distinguish the words.

The symptoms are those of a total or almost complete loss of the power of accommodation in the eye. The patient is unable to focus his eye for near objects, and surrounding bodies appear indistinct. In one of the cases the patient could see distinctly objects at a certain distance, could read at twenty-six feet the markings on the clock; in fact, she was able to appreciate those objects which were far enough off to allow the parallel rays proceeding from them to form a focus on her retina without any effort of adjustment of her own, while at the same time she could not clearly distinguish near objects or read large ordinary type. She could only make out with difficulty the letters of words in Canon type.

In each case, with a slightly convex glass, the patient was able to read clearly moderate-sized print at its focal distance. The lens rendered the object clear without magnifying it. The prognosis is, perhaps, favorable; for in the four cases cited a speedy recovery to good vision followed the treatment, which consisted in resting the eyes, (not allowing them to attempt reading,) the free use of iron, quinine, and purgatives, and cold sponging and splashing the body.

It is difficult to assign a true cause for this affection, or to suggest what pathological state produces it. It is a condition analogous to the partial or entire paralysis which frequently attacks certain muscles or sets of muscles, especially those of the lower extremity, thus allowing a preponderance of action to their opponents, and producing some of the forms of the non-congenital varus and valgus. Why certain muscles should, after a long and depressing illness, become paralyzed, while others in the same limb remain unaffected, it is difficult, if not impossible, to say; but the fact is well known, although we cannot comprehend in what manner such a result is effected.

IV.—*Case of Perforation of the Stomach occurring under unusual Circumstances.* By BENJAMIN BELL, F.R.C.S.E. (Edinburgh Medical Journal, March, 1861, p. 783.)

An interesting discussion was elicited in the Medico-Chirurgical Society of Edinburgh, on the 6th of February, 1861, by the history of a case of perforation of the stomach, presenting peculiar features, both in its history and the appearances observed after death. From a review of the whole case, Mr. Bell thinks it probable that the young man had been affected with chronic disease of the stomach for some weeks at least before his fatal illness. Such affections, we know, are often very insidious in their progress, not being invariably accompanied by such well-marked symptoms as the *post-mortem* appearances might seem to warrant.

The patient was not altogether well on the morning of an excursion he took with some companions the day before his death, and the exercise and food he indulged in on that day were very unfavorable to one in his circumstances. The exertion of walking and partly running five or six miles; the raw turnips which he ate; the successive drinks of cold water when heated; the beer he drank; the walk homeward soon after dinner, were all more or less calculated to prove hurtful to one who, there is reason to believe, was affected with chronic inflammation, or even ulceration of the stomach. On his return, exhausted and shivering, he was sent to bed; retching came on and recurred at intervals, the matter ejected from the stomach, at first colorless, soon changing to a dark-brown fluid resembling fæces, but not having a feculent odor; and the belly began to swell rapidly.

He had severe paroxysms of pain but no sickness or nausea—his vomiting seeming to arise from the quantity of wind which was collecting incessantly in his stomach. His pulse was feeble, his skin cold and livid. A mixture of brandy and laudanum given to him was vomited up again and again. A small dose of medicinal naphtha was retained, but the vomiting soon commenced anew, and the parietes of the whole abdomen appeared to be stretched to their utmost limits, the patient calling out several times that he was going to burst. A little emphysema was now detected in the right groin, among the loose cellular tissue near the femoral ring, and the progress toward death was very rapid. Death itself occurred almost suddenly.

Inspection twenty-two hours after death revealed the presence of two round openings, equaling in dimensions half a crown, about the middle of the posterior aspect of the stomach. Extensive emphysema existed in the cellular tissue surrounding the viscera of the abdomen, as well as interlobular emphysema of both lungs, in front. Mr. Bell is inclined to believe that perforation to a limited extent occurred at the time of his symptoms becoming all at once greatly and alarmingly aggravated with *tympanites*, although it is *possible* that it took place the day before, during his excursion, when he complained that he felt so suddenly weak and "done up." The writer is disposed to think the extensive perforation due to chemical action occurring after death, digestion being in progress, a large quantity of undigested food being discovered in the stomach.

V.—*The Spread of Zymotic Diseases.*

1. *An Epidemic Tracked.* (Lancet, April, 1861.)
   Recent Introduction of Yellow Fever into Port Royal, Jamaica. By DR. BRYSON. (Ibid.)
2. *Quarantine and the Spread of Epidemic Diseases.* By GAVIN MILROY, M.D. (Medical Critic and Journal of Psychological Medicine, April, 1861.)
   Outbreaks of Yellow Fever in Ships of War. By GAVIN MILROY, M.D. (Lancet, April 20, p. 383.)
3. *Outbreak of Exanthematic Typhus at Liverpool.* (Medical Times and Gazette, April 13, p. 390.)
   Imported Fever in Liverpool without Quarantine. (Lancet, quoted in Dublin Medical Press, April 17, p. 270.)
   The Egyptian Fever at Liverpool. (Medical Times and Gazette, May 4, p. 473.)
   The Fever at Liverpool. (Dublin Medical Press, April 17, p. 273, and April 24, p. 286; Lancet, April 27, p. 424, and May 11, p. 472; Medical Times and Gazette, May 4, p. 477.)

1. In the words of the *Lancet*, there are few more important questions in connection with the management of the health of sailors in tropical climates, and the resolution of some difficult points alike interesting to science and to commerce, than the determination of the conditions under which epidemic diseases, such as yellow fever and cholera, arise and are diffused. It has been an old and with some is still a favorite belief, that yellow fever is a disease not infectious, but solely due to a peculiar constitution of the atmosphere, strictly limited, indeed, in locality and arbitrarily bounded in duration. In Dr. Bryson's valuable paper, presented to the Epidemiological Society, relating the successive outbursts of yellow fever in a consecutive series of her Majesty's ships, facts and conclusions were recently stated which lead almost irresistibly to the view that yellow fever is directly, intensely, and fatally infectious.

The ship Icarus had touched at Balize, in August. There the yellow fever raged. Soon after leaving, her crew were attacked with the disease. Out of 120 persons 37 died. When the vessel reached Port Royal, a pinnace was sent from the Imaum to assist in landing the crew. 11 out of 14 of the boat's crew from the Imaum were then also seized with yellow fever, and most of them died. Then one of the Imaum's crew, who had only come in contact with the officers of the Icarus and their baggage on shore, was taken with the disease, which spread indiscriminately through the ship, attacking 38 persons, old and young, of whom 17 died.

Again, the ship Hydra's boats were for two nights employed in rowing guard around the Icarus. Within two days the yellow fever attacked the crew of the Hydra. It spread through the ship, killing 8 of the crew; and was only extinguished by dispatching the Hydra to the northern latitude of Halifax, Nova Scotia.

Finally, when the Imaum became the seat of yellow fever, as above stated, after communication with the ill-fated Icarus, a number of supernumeraries were removed from her to the Barracouta, but as much as possible segregated from its crew. Nevertheless, it was soon evident that these men had brought the seeds of the fever with them. Cases of yellow fever occurred among the supernumeraries, and then it spread to the crew of the Barracouta, its fatal ravages being only checked by the ship running into temperate latitudes.

It is thus, concludes Dr. Bryson, as clear as evidence can well make it, that the crew of the Icarus brought the yellow fever into Port Royal, that they infected the boat's crew sent from the Imaum to remove the sick to the hospital; and that the Imaum's boat's crew next infected their shipmates, who had previously been in perfect health. In like manner the Icarus communicated the disease to the boat's crew sent from the Hydra, who also subsequently infected their shipmates. Next the crew of the Barracouta were infected by the supernumeraries sent from the Imaum.

Thus from one central focus, and within the space of a few weeks, was the yellow fever radiated in three distinct and distant directions, establishing at each point a fresh nidus of infection, capable of propagating itself to all susceptible persons coming within the sphere of its influence, and contributing another unequivocal and conclusive proof of the communicability of the disorder.

2. From yellow fever to quarantine the transition is easy, and we therefore pass at once to the subject of the value and uses of quaratine regulations, and to the importation of fever where such regulations are not in force. That quarantine has failed, and continues to fail, in effecting the object for which it was established, is patent to all, says Dr. Milroy, who makes the subject a matter of special study in one of the journals before us. The countries in which it is most systematically and stringently exercised are certainly not more free than others from pestilential visitations, and some of them, Portugal and Naples, for example, have suffered more frequently and severely of late years from destructive epidemics than Holland and Great Britain, where the ordinary restrictions of quarantine are comparatively in abeyance.

The writer next refers to the mode in which epidemic diseases arise and are propagated; the indispensable co-operation of an impure and vitiated atmosphere to the full force and malignity of all pestilential diseases; the various signs or phenomena which precede epidemics; the migratory character of such diseases, like the progression of insect swarms, from one region to another, and the history of the spread of yellow fever, cholera, and the "black death" from distant climes; and suggests that if accurate registers were kept of the exact dates of the development of the disease in different countries, and of other meteorological phenomena at the same time, we might some day make an approach to the discovery of a "law of epidemics."

The doctrine of "contagion" is next discussed, and the view that a disease must universally and invariably manifest a power of transmission from one person to another, because it has done so under certain special conditions, is not inaptly considered by the writer as untenable as that because trees may be multiplied by slips or cuttings planted in the ground, their propagation is never effected by their seeds being wafted from place to place. Dr. Milroy places the value of quarantine as an instrument of good, in removal of the sick into a healthy locality, away from the ship on board which they have sickened, not in the detention of the passengers and crew because they have recently arrived from sickly regions.

There is no reliable evidence, says the writer, to show that any pestilential disease was ever introduced into a country by the cargo of a ship, or by the ordinary articles of trade or merchandise; always provided that they were in a fresh, unputrescent condition, and excluding, of course, from the category such articles as the bedding and body clothing of the sick. Among the thousands of men who have been employed, since the beginning of the present century, in the lazarets of Malta, Marseilles, and Genoa, in handling the cotton bales and other goods on board vessels from Turkey and Egypt, not a single instance of sickness attributable to the occupation has occurred.

The general principles governing the proprieties of quarantine regulations thus laid down by Dr. Milroy seem to have been introductory to a further discussion of the same or kindred subjects. Thus we find in the *Lancet* some views by the same writer on "Outbreaks of Yellow Fever in Ships of War." An important suggestion is made which is not wholly applicable to Great Britain. It is this: Why should not a naval medical court-martial be held upon every vessel, which suffers loss or injury to human life, the evidence weighed, and the opinions of medical officers recorded, and important questions in naval hygiene settled? Could not the Epidemiological Society collect all scattered information upon outbreaks of the yellow fever pestilence on board ships, whether of war or of commerce, for the last ten years, or at least prepare a method of uniform observations for future cases?

3. Liverpool has lately afforded the Transatlantic medical journals a fertile field for the study of exanthematic typhus fever imported into that seaport. The facts are interesting. On the twenty-second of February, an Egyptian frigate, the Scheah Gehald, came into port from Alexandria, after a tedious voyage, with three hundred badly-clothed and half-starved people on board. About eighty of the crew were on the sick list, but no case of *fever* occurred during the voyage; nothing but dysentery or diarrhœa, a few chest affections, and three or four frost bites.

The condition of the men, however, exceeded in filth and stench anything that had ever come under the eyes and noses of the observers, and the lice on them constituted a phenomenon such as has not been witnessed since the age of the Pharaohs. Nevertheless, two hundred of them were taken, without quarantine or precaution of any kind, to a neighboring establishment of baths and wash-houses for ablution, and thirty-two to one of the general hospitals, in which they soon gave rise to fatal consequences. At the former establishment, the bathman, the keeper of the baths, and a female assistant were attacked with "typhus fever," while at the hospital the senior and junior house-surgeons, a student, a clergyman, two nurses, two porters, and nine patients became likewise affected. The character of the fever was that of true typhus.

It is important, says the *Medical Times*, to ascertain beyond doubt the following facts: 1. Whether really, as asserted, no single person among the Turkish crew had typhus, at the time when the disease was communicated to persons in Liverpool. 2. Whether the vessel during the voyage had had any cases of typhus fever, or whether any of the crew had had any communication with persons ill of that disease. 3. Whether it can be clearly made out that *all* the cases occurring at Liverpool among the inhabitants were really cases of exanthematic typhus. 4. Whether the disease seemed to be caused by emanations from the clothes or from the persons of the Turkish sailors who were dirty and sick, but who, it is stated, had not typhus.

Dr. Cameron, physician to the hospital, gives the following facts and views on the origin of the epidemic. The hygienic condition of the hospital after the admission of the Egyptians, and the prevalence of typhus fever in the locality in which the hospital is situated, might offer a satisfactory explanation; but a better may be found in the relationship that exists between typhus and dysentery, and, under certain circumstances, their probable convertibility the one into the other. Dr. Cameron thinks that the epidemics of fever which commit such havoc in our jails and emigrant ships are replaced, in the dark races, by a no less fatal dysentery.

If the general views of the writer be accepted as the correct explanation, we can comprehend how individuals in perfect health may suffer, when suddenly brought into contact with others who were saturated with the poisonous miasm, to the noxious influence of which they had, from gradual exposure, become insensible. In the discussion elicited upon this invasion of typhus fever in Liverpool, the ground is taken by some, and combated by others, that the darkness of the skin of the Egyptians prevented the surgeons from seeing the exanthematous manifestation of the disease.

In reviewing the history of these cases, the facts appear to be, that the specific poison of typhus was carried in the ship, without acting on persons who cannot be supposed to have been insusceptible: that when the sailors went to the hospital and baths, they carried along with them two conditions all-powerful in the production of disease: firstly, an effluvium arising from their filthy, unwholesome, and sickly bodies, which vitiated the surrounding air, and, secondly, clothes alive with animalculæ, and saturated, doubtless, with infectious matters; and that the contagion did not propagate itself beyond the persons first attacked.

It is rather a remarkable circumstance, that when the Egyptian sailors left Liverpool again, apparently in good health, in another vessel, fever broke out among them, and proved very fatal, both to the Europeans and to the Egyptians on board. If this be true, and this last disease was unmistakably typhus fever, the argument that the fever in the dark races assumes the form of dysentery would seem to lose some of its force.

The facts thus detailed are still undergoing investigation, and may therefore again demand our attention at a future time, should any new views be elicited.

VI.—*Progressive Locomotory Ataxy.* By M. DUCHENNE, of Boulogne. (London Lancet, January 19, 1861, p. 71.)

The Paris correspondent of the *Lancet* does not allow his English friends to be blind to the new theories and novel researches of the French pathologists. The *Parisian Medical Intelligence*, in the number quoted above, is mainly devoted to recent additions to the pathology of affections of the nervous system, and especially with reference to "that definite group of symptoms, identified and rescued from the chaos of nervous affections by this pathologist, (Duchenne,) and placed among the still obscure neuroses, under the title of 'Progressive Locomotory Ataxy.'"

The fundamental characteristics of this special disorder consist in the progressive diminution of the co-ordinating power, and in the simulation of paralysis, while muscular force continues in all its integrity, (as may be proved by the dynamometer.) The first morbid indication, often overlooked, is strabismus, the third pair of nerves or the sixth being implicated, and ocular divergence, or other deviation, accompanied by diplopia, is noticed. Its disappearance is followed by sudden attacks of acute lancinating pain occurring in different parts of the body, generally in the limbs, of an evanescent and neuralgic character, and, to the patient, resembling electric shocks.

These are followed by vertigo, vomiting, disturbance of the co-ordinating function, and increasing obtuseness of tactile sensibility, especially in the lower extremities—a train of symptoms which points more directly to the cerebral origin of the disease. The gait becomes uncertain and hurried, each movement of the leg resembling an awkward kick. The flexion of the various muscles of the limb in progression reminds one of the movements of a child's harlequin toy or marionette—a phenomenon referred by M. Duchenne in part to a disturbance of that harmony which, in the normal state, exists between muscles contracting under the stimulus of the will, and their special antagonists; in part to a loss of that instinctive or voluntary association inseparable from the working of the physical mechanism.

The patient loses the automatic portion of the co-ordinating function, and has to supply its place by the exercise of voluntary power. When all these symptoms increase in intensity, progression is rendered impossible, and, although no muscular paralysis exists, the patient is as thoroughly helpless as if stricken by paraplegia. Post-mortem examinations of the brain and spinal cord reveal no organic defect, and the experiments of M. Flourens serve to localize the disturbance in the cerebellum, the special organ of locomotive co-ordination. The treatment of this malady, in its various phases, has been hitherto completely unsuccessful.

VII.—*Statistics of Insanity in France.* By M. LEGOYT. Translated by J. W. BARSTOW, M.D., Resident Physician, Sanford Hall, L. I. (American Journal of Insanity, April, 1860, and April, 1861.)

In 1843, the French *Bureau de la Statisque Generale* published a series of tables, showing the condition and management of insane asylums in France, from 1835 to 1844, inclusive. In 1857, a continuation of the same series was published, giving similar statistics for the twelve years from 1842 to 1853, inclusive, and bringing the report forward to the close of 1853. The first part, relative to the eleven years, 1842–52, gives the general results of progress from year to year, with tables of admissions, discharges, etc.; the second part is devoted specially to the statistics of the year 1853.

Under the head of "Medical and Physiological Observations," it furnishes, as minutely as possible, a series of facts upon the development of insanity, upon the mortality and the results of treatment in this unfortunate class, by sex, age, civil condition, degree of education, occupation, etc.; also, some well-digested hints upon the probable causes of lunacy, making the usual triple distinction of the same into predisposing, physical, and moral.

There are two sources of error, however, which must detract somewhat from the value of the results, viz., the failure to classify the idiots and cretins in the various asylums, and the counting, among the admissions, of many cases which have been discharged, apparently well, and shortly readmitted, after a relapse; also, those who have made their escape from asylums, and are soon retaken; and, finally, those cases which are merely transferred from one asylum to another. Both these errors will be corrected in subsequent reports.

After alluding to the number of institutions in France devoted entirely or in part to the treatment of lunatics, (one hundred and eleven, including those of every class,) and to the population of all the asylums of France since 1835, M. Legoyt refers to the preponderance of female cases, owing to the fact that male patients invariably remain a shorter time under treatment than females, and also that the deaths of males in asylums greatly exceed in number those of females. The proportions are as follows:—

Males, in 1846, 48 to 100,000 inhabitants, or 1 in 2063.
In 1851, 57 to 100,000 inhabitants, or 1 in 1731.
Females, in 1846, 53 to 100,000 inhabitants, or 1 in 1877.
In 1851, 61 to 100,000 inhabitants, or 1 in 1625.

In looking at the *influence of socal crises* and agitations of the public mind upon the development of insanity, he considers that they have ceased to affect materially the public, simply by the fact of their frequent occurrence. The cholera of 1849 appears not to have exercised an influence corresponding to that of 1832, which, according to the testimony of many observers, had produced a large number of cases of mental disease, as the result of panic.

The relative *liability of the sexes* to mental disease next engages attention. The following table, according to M. Legoyt, seems to settle this question:—

	Males.	Females.	Total.
Total number of admissions to French Asylums, (1842 to 1853,)	50,194	43,975	94,169
	Per cent.	Per cent.	Ratio of Males to Females.
	53·30	46·70	1·14 to 1

He therefore confidently concludes that insanity is a disease to which men are more subject than women.

Influence of Age.—To sum up all the cases under treatment in 1853, and take the average age at which they are admitted to treatment, we find it:—

For males	39 years 1 month.
" females	41 years 9 months.
" both sexes	40 years 5 months.

The mean age, therefore, of admission to French asylums is forty years and five months.

Influence of Domestic Relations.—One of the most remarkable facts brought to light by the tables collected, is the large proportion of unmarried persons admitted to the asylums, being for both sexes 61·80 per cent. of all those under treatment; while in the whole population at large, deducting all under fifteen years, there are only 36·74 per cent. unmarried inhabitants, being a proportion of more than one-third less than in the asylums.

Professions and Vocations.—Of 32,876 inmates of the various French asylums in 1853, it was found impossible to ascertain the professions of more than 27,620. Next to the soldiers and sailors, the liberal professions furnish the largest proportion of insane cases. After these, in order, come servants, domestics, day-laborers, etc., then mechanics, and finally those engaged in commercial pursuits. Looking at the class of liberal professions specially, we learn that the proportion of artists in the French asylums is nearly eight times greater than that of proprietors and tenants, seven times that of jurists, five times that of priests and physicians, and four times that of literary men.

The author then refers to the *causes of insanity* in nearly 20,000 cases, and regards hereditary predisposition as the chief predisposing cause; to the effect of seasons; the proportion of relapsed cases; the effect of city and country life; the nativity of those affected, etc.

Mental affections seem to be much more frequent among individuals born in those localities in the vicinity of the Seine, and also those which lie in the northwest of France, *i.e.* Bretagne and Normandy, while they are much less common among individuals born in the southern departments and the mountainous districts. Four of these departments, most remarkable for their industrial interests, stand at the head of those furnishing the greatest number of cases.

M. Legoyt then develops the necessity of prompt removal of patients from home upon the first manifestations of disease. During the prime of life the chances of recovery from mental derangement are most numerous, and these chances diminish rapidly as patients advance in age, especially as they approach the period when the mental powers naturally become enfeebled.

The average *age at which recoveries took place*, in 1853, is found to be as follows:—

For males	36 years and 5 months.
" females	38 years.
" both sexes	37 years and 2 months.

In the estate of marriage, the chances for recovery are greater than either in celibacy or widowhood, and in the widowed than in single persons; but we must remember that the class reported as single naturally includes all those whose insanity is dependent upon certain congenital or organic conditions which prevent the free development of intelligence, and which at the same time preclude marriage, as, for instance, idiots, cretins, etc.

Soldiers and sailors, and next those engaged in mercantile pursuits, present the largest number of recoveries. After these come mechanics; and the liberal professions rather oddly recover in just about the same proportion as laborers and servants.

The *relative mortality* among the insane in hospitals in France was six times greater than that of the population at large, owing to depressing causes which operate unfavorably upon the inmates of insane establishments, aside from the immediate influence of the mental disease.

The rest of this French contribution to statistical literature is devoted to local details, which, though eminently useful to a collector of minutiæ, would scarcely interest the American reader.*

OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

BY WM. B. ATKINSON, M.D.,

LECTURER ON OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

I.—1. *Placenta Prœvia.* By D. LLOYD ROBERTS, M.D., Manchester.

Dr. Roberts gives the details of three cases of placenta prævia, which he considers as demonstrative of the fact that turning may be resorted to with safety to the mother, when the os uteri is dilated only to the size of a shilling, provided rigidity be absent; and that waiting for further dilatation, as recommended, may so exhaust the powers of the patient as to render recovery impossible; that the administration of full and decided doses of tincture of opium with Indian hemp, say 90 to 120 drops of the former to 20 of the latter, is beneficial in preventing the syncope which often occurs after severe hemorrhage; that where the child is dead, and version has been performed, and in cases where the os is not sufficiently dilated to permit the easy passage of the head, it is preferable to keep up gentle traction, and trust to the natural powers, rather than to make forcible attempts at extraction and risk a laceration of the os; by the former method the head is brought to press more continuously upon the vessels, thus preventing further hemorrhage.—(*Edinburgh Med. Jour.*, Feb., 1861.)

2. *Ibid.* By H. A. MARTIN, M.D., Roxbury, Mass.

Mrs. S., aged fifty-seven, had hemorrhage at the sixth month, which was controlled by the usual means, until the full term had expired, when a profuse discharge suddenly occurred. An examination revealed a firm coagulum blocking up the upper portion of the vagina. As the pains were feeble, and this *tampon* seemed to control the hemorrhage, it was suffered to remain. In about four hours this was expelled, the os was found to be high up, dilated to the size of a half dollar, with two-fifths of the opening occupied anteriorly by the edge of the placenta, behind which the membranes protruded at every contraction. As the hemorrhage was very profuse, and the os unyielding, version was out of the question, therefore the membranes were ruptured, and the vagina carefully plugged with linen; at the same time an infusion of one drachm of the whole grains of ergot in a teacupful of boiling water was given. The pains improved, and in an hour the tampon was expelled; and the os being well dilated, and the child's head well advanced, the forceps were applied, and the delivery at once accomplished; the uterus firmly contracted the moment the placenta was removed. The patient rapidly recovered. The child inspired but once, and no efforts could cause a continuation. Its body presented the appearance of the most complete anæmia, which was evidently the cause of death.—(*Boston Med. and Surg. Jour.*, April 18, 1861.)

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* Those who desire to compare the statistics of insanity in France with similar results obtained from American sources will find all the facts at that time attainable in a paper entitled "Statistics of Insanity in the United States," by Richard J. Dunglison, M.D., published in this journal, in July, 1860.

3. *Ibid.* By Dr. MARTYN, London.

Mrs. D., at full time, had a very profuse discharge, with very feeble pains, the os dilatable and high up. As she was much exhausted, the hand was used as a tampon, while support and ergot were given. The placenta was then separated from around the os, but fresh hemorrhage coming on, with slight pains, the membranes were ruptured, and the delivery accomplished by version. The child did not respire, and the mother recovered slowly.

Mrs. ——, at the eighth month, hemorrhage profuse. The pains, after an opiate, became stronger, and after a labor of twelve hours, a sharp pain expelled a dead child and the placenta. Recovery slow.

In a third case, near the close of pregnancy, though the hemorrhage was but slight, it was deemed advisable to bring about delivery. The membranes were ruptured, and the placenta detached from the os, with very little loss of blood. But the funis coming down, version was performed, and a dead child extracted. Recovery natural.

Dr. Martyn had met with but nine cases of unavoidable hemorrhage in 1004 labors; one was fatal to the mother and seven to the child.—(*Lancet*, April 27, 1861.)

II.—*The Induction of Premature Labor.* By HENRY JAMES, F.R.C.S., London.

The importance of premature labor, as a means of saving the life of the child as well as of alleviating the sufferings of the mother, induced Dr. James to communicate the method which, for many years, he has followed with almost uniform success. He has since his first operation, in 1848, learned that Dr. Stultz, in 1834, adopted a similar plan.

The patient is placed in the usual obstetric position, and the fore finger of the left hand is passed up to the os uteri, and, as soon as possible, between its lips into the organ; the neck is now to be slightly pulled down, and the finger still within is to be passed round it as far as possible. The passage of the finger is seldom accomplished upon the first attempt; upon the second trial, however, the vagina will generally be found to be more lubricated, and the os lower down; frequently it will be necessary to repeat the manipulation on successive days, a third or fourth time. Great assistance may be rendered by the female bearing down, or by pressure being made with the right hand of the operator upon the fundus uteri. On each occasion some pain will ensue, and ultimately the sensations of labor will come on, when an elastic tube, or a male catheter, attached to an elastic bottle, is to be passed through the os and between the walls of the uterus and the membranes to the extent of from four to six inches. Care is required to avoid rupture of the membranes, and if any resistance is felt, the tube should be withdrawn and passed in another direction. This is done, lest the placenta should be encountered, and thus hemorrhage be produced. The catheter being thus inserted, the elastic bottle is filled with cold water, which by pressure is forced up. Pains follow, and the water is generally returned in gushes. When the os dilates and the membranes protrude, they should be ruptured, and the birth will speedily take place.

Dr. James reports several cases; one woman being delivered four times, three living children; a second, twice, one child living, the mother dying on the second occasion; a third, three times, two living children; the fourth and fifth, twice, one living child each.—(*Lancet*, May, 1861.)

III.—*Thirty-two Years Utero-Gestation.* By J. H. WHITE, M.D., Delaware.

Mrs. R., aged sixty-two, tall, and much emaciated, came under the charge of Dr. White, May, 1860. Had one child by her first husband. At thirty, she fell and struck the lower part of her abdomen transversely on a stick of hewn timber. Severe inflammation ensued, a physician was called, and she was pronounced enceinte. Illness continued, and at the supposed full term, she had severe labor-pains, but without effect. Lactation was shortly established. Falling into other hands, she was treated for dropsy. At this time there was a constant and copious discharge from the vagina of an offensive fluid resembling beef brine. After two years, her health improved, the secretive functions of the uterus were established, and continued regularly till the age of forty-eight. After this she enjoyed comfortable health till sixty, when she commenced to suffer greatly with constant nausea, vomiting, wakefulness, and a desire to urinate, with a bearing down like labor. She passed, during some twenty months of this suffering, small bones and spicula, evidently fœtal. After her death, which occurred in September, an examination revealed in the womb the bones of a fœtus. There were extensive adhesions of the uterus to the lower intestines, pelvis, and bladder, and free communication between the latter and the womb, the mouth of which was closed.—(*Ohio Med. and Surg. Jour.*, March, 1861.)

IV.—*The Etiology of Vomiting in Pregnancy.* By W. M. TURNER, M.D., Petersburg, Va.

Dr. Turner, rejecting all other theories upon the subject, contends that this disorder is a natural affection. The absence of it is due to smallness of the fœtus, to excessive capacity as regards the abdominal, uterine, or pelvic region, or to non-susceptibility. Either of the first two causes would preclude pressure upon the blood-vessels. In the last instance there exists a sluggish state of the brain, etc.; hence there is no general sympathy. This amounts to an inactivity—an unhealthy condition.

Dr. Turner considers the correct cause of morning sickness to be the *pressure exercised on the blood-vessels by the gravid uterus.* Œdema of the lower extremities proves this. Why should not the brain suffer by this irregular circulation? The womb by this pressure we know creates œdema, neuralgia; and it is natural that the sickness should be decided in the morning, after the recumbent posture during the night. The nausea disappears as the patient stirs about, and the circulation becomes improved. In cases where great narrowness exists, the vomiting is more persistent; and, on the contrary, where the fœtus is small, or the pelvis large, there is no vomiting.

The nausea present in ulcerated conditions of the cervix, at menstrual periods, and in malpositions generally, he regards as easily explained by this hypothesis; for generally we find the womb incredibly engorged and enlarged. A woman in La Charité Hospital suffered much with pain in the lumbar regions, and excessive vomitings. By causing her to lie on the abdomen, with the pelvis raised above the level of the head, both affections were relieved as by magic.—(*Amer. Med. Times,* March 16, 1861.)

V.—*Puerperal Fever complicated with Diphtheria, in which Life was saved by the Tincture of Chloride of Iron.* By ROBERT DRUITT, M.D., London.

A healthy woman, aged forty-two, was attacked after labor with shivering, and violent pain in the left leg. This pain soon changed to the left side, below the mamma. There were extreme restlessness, heat of skin, and prostration; and on the third day, violent fetid diarrhœa set in. On the ninth, the motions, which had continued incessantly, were thin, reddish, and passed involuntarily. The patient was drowsy and wandering, had great difficulty in swallowing, and copious salivation, together with a diphtheritic exudation at the back of the fauces. The free use of wine, brandy, beef-tea, opiates, and quinia failed to stay the progress of the malady, and the patient was sinking, when the tincture of the chloride of iron was given, and with decided and unmistakable effects. The evacuations were deodorized, the diarrhœa ceased in twenty-four hours, and, spite of the throat complication, she rapidly became convalescent. The diphtheritic exudation extended over the posterior half of the soft palate. The upper lobe of the left lung was left consolidated, but has since entirely recovered its normal condition. The quantity in which the remedy was given deserves notice; three fluid ounces were swallowed in five days, besides an ounce wasted in lavements. During the first day that it was given, the patient took two fluid drachms every two hours. It is evident that these doses did good, and probably smaller ones might have failed.—(*Obstetrical Society; Med. Times and Gaz.,* Feb. 16, 1861.)

VI.—*Ovarian Disease combined with Pregnancy.* By JOHN HUNTER, M.A., etc., Manchester.

Mrs. W. had been married three years without being pregnant. She suffered with leucorrhœa and pain in the back, which were soon relieved, and menstruation not again occurring, pregnancy was suspected. In about six months she was attacked with severe diarrhœa; which being cured, the abdomen presented the form and size of about seven months' pregnancy; but, except the absence of menstruation, no other symptoms were present. On consultation, the case was diagnosed as one of ovarian disease, and the iodine treatment employed. The patient took five drops of the tincture three times a day, and the abdomen was painted with the remedy and supported by a well-fitting belt. She had scarcely been well under the influence of the iodine, when she passed from the bowels a small cupful of jelly-like matter, which had all the characteristics of the albuminous substance of an ovarian cyst. The treatment was continued, the belt being daily tightened. The evacuations continued, and the tumor grew smaller, when suddenly she was delivered of a dead fœtus of four months. The discharge ceased, she recovered well, and as a slight tumor remained, the iodine was continued. She is now in comparatively good health, and menstruation is regular.—(*Lancet*, Jan. 26, 1861.)

VII.—*Treatment of Galactorrhœa by the Uterine Douche.* By DR. ABEGG, Dantzig.

The sympathy between the womb and mammæ is well known, as also the influence of suckling on the contraction of the uterus. It is on this idea that Scanzoni has founded a new method of producing premature labor by means of an excitement of the breasts. From these facts, M. Abegg has employed the uterine douche in cases of persistent galactorrhœa, and with the greatest success.

He reports two cases, where, from the death of the child in one, and the insufficient development of the breasts in the other, suppression of the milk became necessary. The usual remedies failed, though most thoroughly employed, and he then had recourse to the douche, at the temperature of about 90° F., prolonged for fifteen minutes. This was continued daily for ten days; the secretion was arrested, and the breasts resumed their natural size.—(*Monatschrift für Geburtskunde*, Dec. 1860; *Gaz. Heb.*, Feb. 15, 1861.)

VIII.—1. *Occlusion of the Uterus.* By DR. M. M. PALLEN, St. Louis.

The patient had suffered for two months intolerable anguish, without menstruation, though with no other signs of pregnancy. By the finger in the rectum, a tumor could be felt; a vaginal examination revealed a shortened vagina; three-fourths of an inch above the external orifice there was an opening but no neck of the womb. The uterine sound could not be passed to any depth. Next day, detecting fluctuation in the tumor, a curved trocar was plunged through this supposed os uteri, and a quart or more of menstrual fluid gushed out, relieving the patient.—(*St. Louis Med. and Surg. Journal*, January, 1861.)

2. *Occlusion of the Vagina.* By A. P. HAYNE, M.D., San Francisco.

E. B., aged twenty, was delivered of her first child about one year ago. All went apparently well, though the catamenia never reappeared. Her abdomen was now gradually enlarging, with a sense of fullness and more or less constitutional disturbance. Examination revealed a firm, resisting membranous adhesion, completely closing the vagina. This evidently extended throughout the length of the canal. Dilatation by means of compressed sponge was employed. Strips of sponge, of the width of two fingers, were folded together, placed in the vagina, and retained by a compress and bandage. After twelve hours it was removed, and a fresh strip introduced. By the absorption and dilatation, at the end of six weeks the occlusion yielded, and a sudden gush of the accumulated effusions took place. By a continuance of the method, the vagina was completely restored to its normal size.—(*Pacific Med. and Surg. Journal*, January, 1861.)

3. *Ibid.* By S. L. Abbot, M.D., Boston.

Mrs. ——, aged twenty-five, was found, on examination, to have a transverse diaphragm, obstructing the vagina toward the upper part. It had a circular opening in the centre, but without any characters indicative of an adhesion or contraction of the opposite walls. Pressure upon this caused considerable pain. An operation was advised, but not performed.

Mrs. ——, in labor with her first child, was found to present a complete occlusion of the vagina by an imperforate hymen. The labor was allowed to proceed, and as the head came down the membrane gave way before it, and the delivery was accomplished.—(*Boston Med. and Surg. Journal*, May, 1861.)

IX.—*The Frequency of Conceptions in Anœmia, and some other Constitutional Diseases of Women.* By Dr. E. A. Meissner, Leipsic.

In women who suffer from general disturbance of nutrition, chlorosis, leucæmia, general anæmia, gastric catarrh, etc., conception is disproportionately frequent. Often after an abortion, metrorrhagia, long suppurating mammary abscess, or galactorrhœa, the physicians and relatives of the patient are disagreeably affected by the signs of a new pregnancy. It is also well known how numerous are the offspring among the poor, in the unhealthy, over-populated manufacturing districts, whose inhabitants are generally ill fed. On the contrary, women living under the most favorable external circumstances, free from care, grief, or want, of strong constitution, in full health, are far behind the former in fecundity, conceiving with difficulty and often remaining sterile.

These observations being contradictory to rational supposition, require physiological explanation. General plethora, a plentiful chylopoesis, with a strong nutrition and fat formation produce an abnormal increased pressure of the blood-vessels, and predispose to the phlegmatic temperament and diminished excitability. A more or less indisposition to coitus combined with it may, under certain circumstances, at a high degree of corporeal heaviness, be increased to an almost total antipathy to sexual intercourse. It is a well-known fact that a more lively imagination, increased sexual desire, and heightened voluptuousness are found in nervous, pale, hysteric, and even tuberculous individuals. The irritation of the medulla oblongata and spinalis, based upon the anæmia, keeps up almost constant reflex action, a more excited life in the sexual apparatus, and a disproportionate ovulation, which is often indicated by the too frequent or too strong menstruation not in correspondence with the nutritive condition of the body.

Besides the preponderance of the sexual over the purely vegetative life, the frequency of conceptions in these subjects depends principally upon the more easy and energetic reaction of the same after external and internal stimuli, in conformity with the greater activity, erethismus of their nervous apparatus. Such a high-grade reaction as is not only generally induced by coitus, but also physiologically aimed at as a stimulus of the highest force, is absolutely necessary to favor all the processes of conception. As to the *local* causes, that is, those originating in the condition of the uterus itself, we find this morbid excitement and increase of sexual desire based upon the peculiarity of the sexual life in women, a kind of hunger of the uterus, and which is greater and more lively in *perfect emptiness* of this organ; hence, a deficient nutrition of its muscular structure, small quantity of blood and consequent diminished pressure of the vessels upon its texture.

In direct opposition to this do we find, very frequently, a weak, even abnormally diminished sexual desire in continued or repeated strong determination of blood to the uterus, in consequence of which the volume of this organ is increased.

Again, the form of the womb is essentially and durably modified in habitual congestion, etc., changing from a flat to a rounded form, the external os uteri and canal of the neck becoming very much narrowed. This acts as a considerable obstacle to conception, as proven by sterility being cured by dilating the narrow orifice.

Analogous with these congestions, is the condition of the uterus before and during menstruation, when the sexual desire and the power of conception are much lessened, while immediately after, the faculty of conception is greatly heightened.

In the plethoric there exists a diminished attraction of the sperm in the generative organs; in fact, plethora is an essential obstacle. There is a tendency to exudation, and thus any sperm present would be washed away. Organs empty of blood attract endosmotically the various substances, as serous and albuminous fluids. It cannot therefore appear strange that the anæmic uterus shows a strong disposition to the attraction of the sperm, and hence to conception, particularly after severe hemorrhages, abortions, etc.—(*Cincinnati Lancet and Observer*, March, 1861.)

X.—*Simulated Hip-joint Disease successfully treated by Applications to the Os Uteri.* By DR. STEPHEN SMITH, New York.

Rose, aged twenty-one, was admitted to Bellevue Hospital, suffering for eight years, and treated for hip-joint disease by means of blisters, etc. On careful examination, doubts as to the existence of the disease were entertained; a speculum examination was made, and excoriations were found around the os and cervix uteri. There was some retroflexion and a clear viscid discharge from the os. Applications were made of two drops of chromic acid, once every eight days, to the os uteri, for four weeks. After the second application, she left her bed and walked about, and as the os and cervix were healed, the *hip-disease* diminished. At present the discharge has ceased for three weeks, the excoriations have healed, and nothing but a little soreness in the inguinal region remains.—(*Am. Med. Times*, February 23, 1861.)

XI.—*Vegetations on the Genitals during Pregnancy.* By DR. THIBIERGE, Paris.

In 1856, Dr. Thibierge presented a paper on this subject, showing these growths to be solely an accident of gestation, and caused only by it. Many new facts have served to confirm this opinion. It is of great importance to prove that these vulvo-vaginal vegetations are not a syphilitic manifestation, as the majority of physicians believe and the books generally teach. He refers to one case reported by Dr. Zerbe, one by M. Chassaignac, and four by Dr. Ancelet, in all of which there was every reason to believe the truth of the statement, that no syphilis had ever existed; in each the growths resisted all treatment, yet disappeared rapidly and spontaneously with the cessation of the lochia.

Madame X., aged twenty-two, without any syphilitic trace, a short time after the commencement of pregnancy, suffered by a growth of tumors, commencing near the anus, extending above, and rapidly covering the whole perineum. By the third month ulceration occurred to such an extent that the least movement caused extreme pain. The physician, considering them as syphilitic, administered the usual remedies, and cauterized them without success. By the fifth month she consulted Dr. Ancelet, when he found surrounding the anus two very large tumors, extending also upon the vulva, much ulcerated, and discharging freely a bloody, fetid fluid. The pain was very great. He painted the parts thrice daily with tincture of iodine, isolated their surfaces with charpie, and applied powder of peroxide of iron, alum, and savine. This cicatrized the ulcerations, permitted the patient to get about again, but the vegetations persisted. At the eighth month she was delivered of a dead child, with an enormous cephalæmatome. A month after the delivery the vegetations had spontaneously disappeared.

Another case, very similar in its history, obstinately resisted all caustics, and left the hospital, without the slightest improvement, at her second month of pregnancy.

After giving the details of a number of similar cases, he relates one where syphilis was present, and the vegetations continued, though by mercury, etc. the syphilitic symptoms were soon dissipated. Here, as is occasionally seen, they persisted even after the delivery, requiring only a local treatment for their cure.

In the great majority of cases, he prefers the application of the acid nitrate of mercury, which causes their disappearance in about four days. Although this treatment is generally safe, yet it should be known that occasionally it gives rise to accidents. In one case it produced mercurial stomatitis.

This subject has proved of much importance, since it may become necessary to decide in a medico-legal view as to whether these vegetations are the result of syphilis or merely of pregnancy. Dr. Louis Penard, in a recent publication, gives an opinion in such a case. A young girl, pregnant six months, has a muco-purulent discharge, and at the orifice and in the cavity of the vagina vegetations of various sizes. His opinion was that nothing existed to cause the belief in a syphilitic origin, as she had none of the symptoms of syphilis, no affection of the skin, no ulcerations; in short, the tumors are due solely to the fact of her being pregnant, and the leucorrhœa has a similar origin in conjunction with the peculiar constitution of the patient.

In conclusion, Dr. Thibierge recommends having recourse to surgical treatment only when the vegetations are very large and persistent.—(*Gaz. Hebdom.*, February 8 and 15, 1861.)

XII.—*Puerperal Vaginitis.* By M. BEAU, Paris.

M. Beau mentions a form of vaginitis with a discharge strongly resembling that of gonorrhœa, and which is the result of pregnancy. It is of common occurrence, and obstinately resists treatment. Nitrate of silver, in solution, applied freely, is the best application.—(*Gaz. des Hôpitaux*, No. 147, 1860.)

XIII.—*Uterine Phlebitis and Puerperal Inflammations.* By Dr. SEBASTIEN.

Dr. Sebastien, having been very successful in a large number of obstetric cases, both in private and hospital practice, attributes his success to the employment of

℞.—Potas. nitrat. p. j ;
Tinc. arnica, p. iv ;
Syr. acac. p. l;
Aquæ, p. ccc.—M.

Dose, a tablespoonful every hour.—(*Gaz. des Hôpitaux.*)

XIV.—*Prolapsus of the Posterior Wall of the Vagina; Operation successful.* By DR. T. G. RICHARDSON, New Orleans.

This case, a negro woman, aged fifty, was admitted to the Infirmary with a supposed prolapsus uteri, of many years standing, the result of frequent child bearing. A soft, reddish tumor was visible between the labia, and upon separating the parts, it was found to be composed of the mucous membrane of the posterior wall of the vagina. The womb was also depressed, but not to such a degree as to constitute prolapsus, as the displacement was seemingly the result of the relaxed condition of the vaginal wall. The patient's health being good, after the usual preparation, Dr. Richardson operated by removing a large V-shaped flap of mucous membrane from the prolapsed wall, and united the edges by means of silver sutures. She was kept on her back, the bladder regularly emptied by a catheter, and the bowels confined by the use of opium. The sutures were removed by the eighth day, and union was found to be complete. Twelve months after the operation, the patient remained perfectly well. —(*Report of Stone's Infirmary, New Orleans.*)

XV.—*Will a Child born after the Mother has had Small-pox, and contracted after she has conceived, be liable to contract the Disease?* By ARCHIBALD HALL, M.D., Montreal.

This paper is intended as a partial reply to a similar question in another journal.

Dr. Hall was called to a patient, aged eighteen, pregnant six months with her first child, laboring under varioloid. Symptoms of approaching labor were relieved by morphia, and she passed favorably through the attack. At full time, she was delivered of a healthy boy, who exhibited no signs of having suffered by its mother's sickness. When a month old, vaccination was twice attempted, but failed. Dr. Hall attributes the failure "to the protective influence afforded by the mother's blood, when circulating through the infant's system during its intra-uterine existence, and while the mother was suffering under the disease, operating upon the constitution of the child, and producing its effects precisely as it is doing on the constitution of the mother. We cannot, of course, explain how this protective agency is exerted, although we can appreciate the positive existence of such a preventative or protective influence in its effects, and I feel bound to consider in this instance the protective influence of the attack of variolous disease on the mother prevented the impregnation of the infant's system, exactly as it would have done in the mother herself."

The child did not exhibit any cicatrixes on any part of its body, and Dr. Hall asks, "Could it have had the disease in utero, and the formation of the ordinary pock-marks have been prevented by the continual application to its surface of the liquor amnii? My own opinion is, that it had not the disease, or I should in all probability have had a case of premature labor to manage, as the consequence of its death. But if it had had it, it would have been a convincing proof of the truth of the theory, that to prevent pitting in small-pox, we should exclude the pustules from all contact with the air."

A precisely similar case was related to Dr. Hall by Dr. Stranaghan. Dr. Hall seems too much inclined to reason on the *post hoc, propter hoc* method, for though his theory has a probability in its favor, yet as it has fallen to the lot of the writer to see many instances where, under highly favorable circumstances, vaccinea has failed to be developed, even though the parent has not previously suffered with any disease, he cannot see the force of the argument as applied in these two cases.

Again, when alluding to the probability that the cicatrixes were prevented by the exclusion from the air, he would seem to forget the fact that many instances are on record of infants born with the whole body disfigured by the pock-marks; yet these children were not less excluded from contact with the atmosphere. We should be strongly inclined to regard both cases as mere coincidences, and that the children belonged to that small class of persons who seem to be proof against all kinds of poisons.—(*Brit. Am. Jour.*, February, 1861.)

2. *Ibid.* By A. H. DAVID, M.D., Montreal.

Dr. David relates a third case, eight months pregnant, so severely attacked as to be delirious and very ill. The twelfth day of the eruption, labor came on, and she was delivered of a fine healthy girl, without any spots or marks of any kind. At the age of three months vaccination was twice attempted and failed, and having gone to England, it has failed there also.

During a large midwifery practice, Dr. David has hitherto invariably found small-pox to produce miscarriage in pregnant females, and the children were still-born, covered with the eruptions. "These cases may become of importance, on the question of vaccination and revaccination, of which we still have a great deal to learn."—(*Ibid.*, March, 1861.)

XVI.—*Treatment of Prolapsus Ani of Children by Subcutaneous Injection of Sulphate of Strychnia.* By M. FOUCHER, Paris.

In the case related, the child, aged four years, had suffered for several months; when reduction was not immediately accomplished, the part was closely grasped by the sphincter, producing great pain. M. Foucher, with one of Pravaz's syringes, injected, externally to the anus, but in the direction of the fibres of the sphincter, ten drops of a solution, in the strength of one part by weight of strychnia to one hundred parts of water. Twenty-four hours after, fourteen drops were injected. The cure was then complete and permanent.—(*Gaz. des Hôpitaux*, No. 83.)

PHYSIOLOGY.

BY S. WEIR MITCHELL, M.D.,

LECTURER ON PHYSIOLOGY IN THE PHILA. MED. ASSOCIATION.

I.—*Alcohol and Anœsthetics.* By LALLEMAND and PERRIN, Paris.

The method which we have followed in studying the physiological effect of alcohol and the anæsthetic agents (chloroform, sulphuric ether, amylene) permits an exact comparison of these bodies with each other, in respect to the successive phases of their action upon the economy.

They exert two kinds of effects: a local action, which is connected with their physico-chemical properties, and a general or physiological action, which does not manifest itself until after their absorption.

Alcohol, which is miscible with water in any proportion, is absorbed by the stomach; if diluted and injected into the veins, it circulates with the blood. Anæsthetics are absorbed only in the gaseous form, and principally by the pulmonary mucous membrane. Sulphuric ether, however, which is more soluble than its two allied substances, is absorbed in the liquid state, at least in part, by the gastric mucous membrane.

Alcohol and the anæsthetics exert an action upon the cerebro-spinal nervous system, which is altogether characteristic.

They produce, in the first place, an excitement, more or less marked, according to their several characteristics. The length of the period of excitement seems to be affected by the solubility and volatility of each of these agents. The duration is longer for alcohol than for either chloroform or amylene, ether occupying a middle place.

Alcohol and anæsthetics, by their gradual effect, at first suspend and finally abolish the sensibility and motor endowments of the nervous system, thus influencing the other functions, and finally causing death.

Alcohol and anæsthetics are neither changed nor destroyed by the body.

They remain for a shorter or longer time in the blood and tissues; the length of their stay being in direct ratio to their solubility, and in inverse ratio to their volatility.

Alcohol and anæsthetics accumulate in the nervous centres by virtue of a special affinity for the tissues of these parts.

The analytic method which we have employed enables us to detect the presence of the smallest quantity of these different agents.

Alcohol can also be distilled in considerable quantities from the organic liquids and solids, and its presence in them thus proven.

The following table indicates the proportion of alcohol and anæsthetics which enter into the composition of the different parts of the body when by ingestion, injection, or inhalation these agents have been received into the system. In each case, the amount found to exist in the blood has been taken as the unit.

ORGANIC SUBSTANCES ANALYZED.	ALCOHOL.		CHLOROFORM.	SULPHURIC ETHER.	AMYLENE.
	Injected into the stomach.	Injected into the veins.			
Blood	1	1	1	1	1
Brain................	1·34	3	3·92	3·25	2·06
Liver................	1·48	1·75	2·08	2·25	1
Muscular and cellular tissue......	Traces of alcohol.	1·75	0·16	0·25	Traces of amylene.

Alcohol and anæsthetics are eliminated unaltered in character or amount.

The channel of elimination is governed, to some extent, by the solubility and volatility of these agents. Thus alcohol, a very soluble fluid, passes out in part by the lungs and skin, but chiefly by the kidneys. Ether, less soluble, is eliminated in small amount by the kidneys, but principally by the lungs and skin. Chloroform and amylene, almost insoluble, are thrown out by the lungs and skin alone.

Alcohol, chloroform, sulphuric ether, and amylene may be regarded as a natural family of medicaments nearly allied by their characters and modes of action. They act primitively and directly on the cerebro-spinal nervous system, and are the true anæsthetics.

The carburetted gases, carbonic acid, and carbonic oxide are not anæsthetic agents. They first affect the blood, and through its alteration alone induce, secondarily, phenomena of insensibility. These two latter bodies, therefore, are only false, or indirect anæsthetics.

II.—*Experiments on some of the various Circumstances influencing Cutaneous Absorption.* By A. WALLER.

Waller's researches on cutaneous absorption lead to results which appear to us important with regard to practical medicine. The subjects of the experiments were guinea-pigs and albino rats. When the leg of a half-grown guinea-pig was immersed into a mixture of equal parts of chloroform and tincture of aconite, the part was, after fifteen minutes, insensible, and the symptoms of poisoning by aconite soon followed: viz., nausea, efforts at vomiting, coldness of surface, weak circulation, laborious respiration, slight convulsive symptoms, and death. The immersion in simple tincture of aconite without chloroform did not cause any of the symptoms of poisoning. If, however, the sciatic nerve had been previously divided, then the immersion of the leg in the simple tincture of aconite was sufficient to poison the animal, evidently through the distention of the capillaries and the more rapid flow of the blood caused by the division of the nerve. A ligature placed round the limb, before the first symptoms of poisoning had appeared, prevented the toxic influence on the system, but it rarely did so after the appearance of the earliest symptoms. In albino rats, the immersion of the limb in a solution of atropa in chloroform caused dilatation of the pupils after two minutes and a half in young animals, after five minutes or later in old animals. If turpentine was substituted for chloroform, the dilatation of the pupils did not occur while the leg remained immersed in the fluid, but appeared immediately after the removal of the limb. The substitution of alcohol for chloroform as a solvent causes great retardation of absorption. An immersion of twenty to thirty minutes produced only very slight effects. Still more slow is the absorption when the atropa is dissolved in water with a slight addition of acetic acid, or when the watery extract of belladonna is rubbed over the leg. The immersion of the foot of a young rat in a solution of morphia in chloroform caused, after about five minutes, somnolency and a great dilatation of the pupils; which latter phenomenon certainly must appear very remarkable when we consider the effects of morphia, given in the usual way, on the pupil. Three minutes' immersion in a solution of strychnia in chloroform produced dilatation of the pupil, and after five minutes the well-known symptoms of strychnia poisoning manifested themselves. No effect was obtained when a solution of strychnia in alcohol was employed. The experiments clearly show how important is the choice of menstruum in the endermic application of medicinal substances.—(*Proc. of the Roy. Soc.*, vol. x. p. 122; from *The British and Foreign Medico-Chirurgical Review*, Jan., 1861.)

MATERIA MEDICA AND THERAPEUTICS; MEDICAL CHEMISTRY; TOXICOLOGY AND LEGAL MEDICINE.

BY EMIL FISCHER, M.D.

Materia Medica and Therapeutics.

I.—*Therapeutical Action of Solanum Dulcamara and Solanine.* By Prof. Caylus, of Leipzig.

Professor Caylus has undertaken a series of experiments to ascertain the exact effects of dulcamara, and its active principle, solanine. These substances produce a paralyzing action on the medulla oblongata, and an exciting action on the nerves. They cause death by producing paralysis of the respiratory muscular apparatus, by an action analogous to that of coneine and nicotine. They possess a therapeutical action in spasms and irritable conditions of the respiratory organs in simple spasmodic cough, hooping-cough, and spasmodic asthma. Their therapeutical action in certain morbid conditions of the blood, as gout, rheumatism, constitutional syphilis, and, perhaps, in certain chronic diseases of the skin, may be due to their augmenting the excretion by the kidneys, of the constituent parts of the blood which have undergone combustion, and not to the excitement of cutaneous activity.

Solanine and dulcamara may be given without danger in inflammatory conditions of the stomach and the intestinal tube, as they exercise no action on those organs. Inflammation of the respiratory organs presents no contra-indication to the employment of solanine and dulcamara, but they are contra-indicated in inflammation of the kidneys. The medium dose of solanine for an adult is from one to five centigrammes of acetate of solanine, a substance which M. Caylus prefers to the pure alkaloid, in consequence of its solubility. The most suitable form of administration is in pills, the solution of the salts of solanine having a very disagreeable taste. The extract obtained from alcohol, and then washed with water to remove the alcohol, is preferable to the watery extract generally employed.—(*Med. Times and Gazette*, March 2, 1861.)

II.—*Chuguiragua in Intermittent Fever.* By M. S. Escolar.

According to M. S. Escolar, (*El Siglo Med. Enero*, 1860,) chuguiragua is a shrub-like plant, which grows in Mechoacanna, Mexico, and seems to belong to the natural family of Compositeæ, group of Mutisiaceæ, (*Lessing.*)

The author reports three cases of obstinate intermittent fever in which he used this remedy with excellent success, the disease being cut short either immediately, or after the next paroxysm. He administered the flowers partly in powder, in doses of one scruple daily, suspended in water, partly in the form of infusion, (one drachm to twelve ounces of water,) or an alcoholic extract, in doses of half a scruple daily.—(*Schmidt's Jahrbücher*, 1861, No. 3.)

III.—*Anchieta Salutaris in Chronic Diseases of the Skin.* By M. Th. Peckolt.

Anchieta salutaris, a creeping shrub, is a native of Brazil, where, according to the author, the bark of its root is considered an efficacious remedy in chronic affections of the skin. The powder of the bark of the root is given in doses of six to twelve grains daily, and its administration continued for one and a half to two months, the dose being increased every week by an additional grain. In the commencement it acts as a drastic purgative, but, after three or four days, causes not more than one or two evacuations a day.

The root is much furrowed; the inner woody portion covered with a thick, porous, and juicy bark, which is easily peeled off. The cortical substance is reddish brown externally, and flesh colored internally. The pith of the root consists of firm, tasteless, ligneous fibres; iodine colors the cut surface of the bark violet, the pith brownish. M. Peckolt found in the bark of the root albumen, gum, starchy substance, sugar, gluten, resin, soluble in ether, and a peculiar crystallizable body—anchietin. From two pounds of the bark sixty-three grains of irregular, needle-shaped, straw-colored crystals are obtained. Anchietin has a nauseous, pungent taste, is inodorous, insoluble in ether and cold water, and slightly soluble in hot water; in alcohol it dissolves abundantly; its solution is of slightly alkaline reaction. On a plate of platinum it becomes almost completely volatilized, under formation of thick fumes. It neutralizes diluted acids, and forms with them partly crystallizable salts; the combination with muriatic acid, among others, presents itself under the shape of beautiful, white needles, grouped in the form of stars; these are redissolved in boiling water, but are nearly insoluble when dried. From the solution ammonia precipitates the straw-colored anchietin. On treating anchietin with concentrated nitric acid, it assumes at first a beautiful orange-yellow, and afterward a chrome-yellow color, without being dissolved; by concentrated sulphuric acid it is colored at first violet, then blackish; concentrated muriatic acid renders its original yellow color more intense.—(*Prager Vierteljahrschrift*, 1861, vol. i., Analekten.)

IV.—*Phosphate of Ammonia in Rheumatism.* By DR. HAMOLECKI.

The author recommends phosphate of ammonia in the treatment of rheumatism. According to Bergson, this remedy was brought into notice by Dr. Buckler, an American physician, who maintained that the uric acid diathesis and sediments disappear after its use. M. Edwards sustained this statement, believing that the formation of an abnormal quantity of uric acid in the blood was the principal cause of rheumatism and gout, and that phospate of ammonia formed with the uric acid and urate of soda in the body two easily soluble salts, phosphate of soda and urate of ammonia. M. Delioux fears the formation of calculi of phosphate of ammonia and magnesia, and does not consider it safe to administer nitrogenous substances, such as ammonia, in rheumatism. M. Rieken, of Brussels, has given phosphate of ammonia in rheumatism without success, but recommends the use of benzoate of soda. Dr. Hamolecki tried the methods of Bouillaud, (venesections,) of Laennec, (tartar emetic,) and of Martin Solon, (nitrate of potassa,) in vain, and, in a desperate case, finally had recourse to phosphate of ammonia, having had his attention drawn to this remedy by Dr. Mattei. His success in this and all other cases was so favorable that, in his practice in the hospital of Kremienczug, he has had, for the last four years, no reason to adopt any other method of treatment. He administers the salt to the amount of two drachms daily.—(*Deutsche Klinik*, and *Prager Vierteljahrschrift*, 1861, vol. i., Analekten.)

V.—*Therapeutic Studies on Essence of Valerian.* By M. BARAILLER.

The following conclusions have been attained by Barailler:—

1. Employed in the case of a healthy man, the essence gives rise to several symptoms, the principal of which are, intellectual sluggishness, drowsiness, deep sleep, reduction in number of arterial pulsations, and, later, an increase and abundant flow of urine.

2. Given to a sick man, it modifies, in a prompt and rapid manner, the symptoms, stupor, somnolence, coma from some dynamic cause, which complicate severe fevers.

3. This modification is obtained by administering from 50 centigrammes to 1 gramme (from 10 to 20 drops) of the essence in twenty-four hours.

4. The action of this remedy can only be explained by the employment of the law of similitude, enunciated by Hippocrates, and by a number of the ancient authors.

5. Certain nervous conditions, such as vertigo, hysteria, essential asthma, etc.

are modified in a remarkable manner by the volatile oil of valerian, which, under the results of a series of new experiments, is capable of extending the sphere of therapeutic applications of this plant very much.—(*Jour. and Trans. Md. Col. Pharm.*, March, 1861; from *Répertoire de Pharm.*)

VI.—*A New Salt of Iron and Quinine.* (Communicated by Dr. FERGUS, of Marlborough College, to the Medical Times and Gazette, March 17th, 1861.)

It is generally found that a salt of the protoxide of iron is preferable to one of a higher degree of oxygenation; but it is also difficult to obtain an absolutely permanent salt of the protoxide. Perhaps, without exception, the sulphate is the most practically useful of all the salts of iron, owing to the uniformity of its composition. Of the quinine salts, the sulphate is also the most available for general purposes. It is not difficult to form a simple combination of these two sulphates, but the resulting compound is not well fitted for general use. The addition, however, of a certain proportion of sulphate of magnesia enables us to obtain a salt which is nearly as soluble as the sulphate of magnesia itself, quite unalterable in the solid state, and forming a solution perfectly clear at first, and remaining so for an indefinite period. The iron has no tendency to a further state of oxygenation; the solution has been agitated with oxygen gas, and kept in contact with it for several days, without the least change. A solution of gallic acid tinges a solution of the salt a light bluish color, after the lapse of two or three days, and many substances which produce an inky compound with the salts of iron may be mixed with it without causing any change of color.

The proportion of the three sulphates which has been adopted, is 80 per cent. of sulphate of magnesia, 15 per cent. of sulphate of iron, and 5 per cent. of sulphate of quinine, one scruple containing 16, 3, and 1 grains of the respective salts. These proportions have been found the best for general use, and also for the purposes of manufacture. The proportion of quinine may be increased by prescribing an additional quantity which is readily soluble in the solution of the salt.

One peculiarity is especially deserving of notice: that in this combination the assisting or adjuvant property of both iron and quinine are remarkably developed, the effect of both, particularly of quinine, being heightened in a very marked manner. At the same time, both of the remedies are less apt to disagree with peculiar constitutions which ordinarily refuse to tolerate either iron or quinine. If the heightened power be borne in mind in prescribing this combination, there will be very few cases found in which it will not be suitable whenever either iron or quinine are indicated.—(*London Pharm. Journ.*, April, 1861.)

VII.—*Coal-Tar Emulsion.* By M. DEMEAUX.

M. Demeaux, in a note to the Academy, recommends the following preparation of coal-tar—a substance much used now in the French hospitals as a disinfectant. This preparation, he says, is recommended by the facility with which it is made, the quantity of coal-tar it contains, and its great solubility. Of coal-tar, soap, and alcohol, equal parts are to be heated in a bath until complete solution is effected, and, on cooling, a very soluble soap is produced, which, with water, makes a stable emulsion. It costs about a franc the kilogramme, and three kilogrammes will emulsify 100 litres of water, each litre containing ten grammes of coal-tar; and in this form may be very advantageously used in hospitals and dissecting-rooms, in certain manufactures, and other places where insalubrious inhalations prevail. The coal-tar soap thus combined is a very manageable substance, and may be used in any desired degree of concentration, and either in the solid or fluid form—its great solubility in cold or warm water preventing its soiling any substance it comes in contact with. It may be usefully employed in baths in some diseases of the skin; while, as a dressing, it is of good service in cases in which the excretions give rise to fetid emanations.—(*Bull. de Thérap.*, vol. lx. p. 130, and *Med. Times and Gaz.*, March 23, 1861.)

VIII.—*On Sulphurous Powder.* By MARCELLIN POUILLET.

The formula of the Codex for the preparation of artificial sulphurous waters for drinking is inefficient and badly studied. The Academy of Medicine, on the report of M. Robinet, has adopted the following formula, due to the researches of M. Marcellin Pouillet, which attains the objects of a good preparation, keeping perfectly well and being economical:—

Sulphuret of Calcium,
Bicarbonate of Soda,
Sulphate of Soda,
Sulphate of Potassa,
Gum-arabic,
Tartaric Acid.

Equal parts of these substances, well dried, are reduced to powder and mixed.

Fifty centigrammes (7¾ grs.) dissolved cold in a litre (2⅑th pints) of water gives, after standing a quarter of an hour, a sulphurous water, which it is impossible to distinguish from the natural sulphurous waters.

The reaction which occurs between the different elements of this powder is easily understood. Tartaric acid and bicarbonate of soda produce carbonic acid; and this acid, in the presence of sulphuret of calcium, gives rise to a disengagement of sulphuretted hydrogen gas, which is dissolved in the liquid. As all the sulphuret of calcium is decomposed, it results that the water is always identical when that compound is pure, and this is a condition essential to a good preparation.

The trials made by MM. Bazin, Cazenave, and Richet have given the most satisfactory results, and M. Bouchardat himself has prescribed with advantage this sulphurous powder.—(*Répertoire de Pharm.*, Feb., 1861, and *Am. Journ. of Pharmacy*, May, 1861.)

IX.—*Æmilia Rigidula De C.; a Tonic and Antichlorotic from Guyana.*

Mr. Michely, of Cayenne, has sent to the *Société d'Acclimatation* some seeds of this plant of Guyana, which is a very powerful tonic and deserves to be ranked among the best bitters of the materia medica. The plant is cultivated the same as bitter chicory, and is taken in the form of salad, with vinegar, salt, and oil, an hour before meals or in the morning. At the same time a tea is taken prepared from the flower-tops. Some remarkable cases are on record, and the firm of Vilmorin, Andrieux & Co., of Paris, are now cultivating the plant for the sake of general introduction.—(*Am. Druggists' Circular*, May, 1861.)

X.—*Chlorate of Potash and Glycerin as a Topical Disinfectant.*

Experiments instituted at Bicêtre, under the direction of M. Martinet, have demonstrated remarkable disinfecting properties in a mixture of chlorate of potash and glycerin according to the following formula: Chlorate of potash, in powder, 2½ drachms; glycerin, 3 ounces; mix. This mixture has been shown, by repeated trials, to present—1. A marked disinfecting power, due perhaps to the change which it produces in the secretion, and the mode of action of the wound. 2. The property of giving the pus, even when of a serous kind, a greater consistence, often like cream. This result is perhaps, according to M. Martinet, a physical effect of the affinity of glycerin for water, which it subtracts from the pus; but is partly due to the favorable modification which is produced in the suppurating surface. He is inclined to think that the preparation of glycerin and chlorate of potash may, by thickening the pus, tend to prevent the occurrence of purulent or putrid infection, which generally takes place in connection with suppuration of a serous and unhealthy character. An advantage of the glycerin is, that it prevents the dressings from sticking to the edges of wounds. According to M. Martinet, the glycerin chlorate of potash is not adapted for wounds or sores of a bright red color, nor for those that are recent or of healthy appearance.—(*Rép. de Pharm.*, and *Dub. Med. Press*, April, 1861.)

XI.—*Ailanthus Glandulosa as Anthelmintic.* By Dr. Hétet.

From an article contained in the Journal *l'Institut* of February 8, 1860, and republished in *lo Sperimentale*, a Florence journal, (July, August, and September, 1860,) it results that our list of anthelmintics is to be augmented by one more remedy, said to be useful especially in cases of tænia. Dr. Hétet, Professor at the School for Naval Medicine in Toulon, has ascertained, by experiments made on animals, and repeated afterward on man, that the *Ailanthus glandulosa*, of the family of *terebinthaceæ*, possesses decided anthelmintic properties. This tree, coming originally from China, is at present much cultivated in Europe as an ornament, and also on account of the utility of its wood and leaves, which serve a particular species of silk-worm as nourishment. The anthelmintic property resides as well in the leaves as in the bark; reduced to powder and given in doses increasing from 50 centigrammes to 2 grammes, they expel the tænia without the least injury to health, and without producing the nausea caused by the bark of pomegranate root and by kousso, the only unpleasant effect being some griping and sometimes slight purgation.

Since the first experiments of M. Hétet, this remedy has been employed as vermifuge on the vessels of the French navy, and always with success. Ailanthus may thus be added to the other anthelmintics, over which it has the advantage of being borne by the system without inconvenience, and of being found everywhere.—(*Journal de Médecine de Bordeaux*, December, 1860.)

XII.—*On the Therapeutical Properties of Bromide of Potassium.*

According to the researches of M. Huette, the administration of the bromide of potassium produces prostration of strength, difficulty in moving, diminution of general sensibility, anæsthesia of the mucous membrane of the palate and larynx, and more or less torpor of the genital organs. M. Thielmann has employed this salt successfully in the treatment of painful erections, satyriasis, and spermatorrhœa. Dr. Pfeiffer has obtained the same results, and has used the bromide in abnormal erections, neuralgia of the neck of the bladder, catarrh of the urinary passages, and gravel. The efficacy of the mineral water of Kreuznach, in the latter affections, is due to the large quantity of bromide of potassium and magnesium contained in this water. M. Pfeiffer administers the bromide of potassium in the dose of 50 centigrammes, raising it progressively to 2 or 3 grammes, (℈ss. to three-fourths of a drachm;) he gives it in two doses, night and morning, or in doses otherwise divided to suit particular constitutions. —(*Bulletin Général de Thérapeutique*, and *Druggists' Circular*, March, 1861.)

TOXICOLOGY AND LEGAL MEDICINE.

I.—*Hœmatine as a Test in Forensic Medicine.*

Hæmine and Hæmatine do not present as yet the slightest pathological interest; but, on the other hand, they have proved of very great importance in forensic medicine, on account of their having been recently employed as one of the surest tests for the examination of blood stains. I myself have been in a position to make experiments of this sort in forensic cases. For this purpose, the best mode of proceeding is to mix dried blood in as compact a form as possible with dry, crystallized, powdered common salt, and then to add to this mixture glacial acetic acid, and evaporate at a boiling heat. When this has been done crystals of hæmine are found where the blood-corpuscles or the substance previously lay, in which the presence of hæmatine was doubtful. This is a reaction which must be ranked among the most certain and reliable ones with which we are acquainted. There is no other substance in which we know such a transformation to take place but hæmatine. This test is extremely important, because it is applicable in the case of extremely minute quantities, only they must not be spread over too large a surface. It would, therefore, not be easy of application in a case where we had to deal with a cloth which had been dipped into a thin watery fluid colored with blood. Yet I was able, in the case of a murdered man, on the sleeve of whose coat blood had spirted, and where some of the drops were only a line in diameter, from these minute specks to produce innumerable crystals of hæmine, though of course microscopical ones. In cases in which the ordinary chemical tests would necessarily absolutely fail, on account of the smallness of the quantity, we are still able to obtain hæmine.—(*Virchow's Cellular Pathology; Medical Times and Gazette*, February, 1861.)

II.—*Poisoning by the Arum, or Cuckoo-pint,* (*Arum maculatum of Linnœus.*)

By M. CANGELLA.

A child three years of age, having masticated, on the 20th of April, 1860, at 2 P.M., some roots of the Arum, commonly called cuckoo-pint, complained immediately of burning pains in the mouth and lips. Three hours afterward it was in a state of profound torpor, to which succeeded a violent febrile reaction.

At eight o'clock I found the little patient in a prostrate condition, unable to speak, raising its hands frequently to its mouth and throat, and uttering at intervals a sharp cry, and starting up as if suffocated. I observed that the caustic action of the plant had extended to the lips, the palate, the tongue, the tonsils, the pharynx, and wherever I could see. The pain of the stomach, on pressing it, indicated to me that the child had swallowed the juice, and that its caustic action had extended thus far.

Not having any means at hand to produce the evacuation of the poisonous matter, I administered a solution of common salt. But deglutition was impossible; the swelling was such that I could not even introduce a probang into the œsophagus. The most energetic revulsive agents were employed without success, and death took place at eleven o'clock, during delirium, from asphyxia.—(*Gazetta Medica do Porto*, and *London Pharmaceutical Journal*, February, 1861.)

III.—*Euphorbia Lathyris as a Poison.*

Three workmen of Toulouse, engaged in the tobacco manufacture, conceived and carried out lately the singular notion of purging themselves immediately after breakfast. They selected for this purpose the seeds of *Euphorbia Lathyris*, which are very much used as a purgative agent among the peasants of that country. One workman took eighteen seeds, and the other two twenty and twenty-five respectively.

A short time after the ingestion of the seeds, they produced violent purgation, vomiting, frequent diarrhœa, and a general pallidness and coldness spread over the body. These symptoms, which strikingly resemble those produced by an attack of sporadic cholera, yielded to appropriate treatment, and in the evening of the same day the three imprudent workmen had entirely recovered.

This case confirms what has already been experimentally proved by Dr. Augustus Dassier, namely, that the seeds of certain euphorbiaceous plants, as those of *Ricinus communis*, when swallowed whole, exert a far more violent action than that of the oil extracted from the same seeds.

According to Sorbeiran, the seeds of the *Euphorbia Lathyris* contain an acrid matter, which is only partly soluble in the yellow fixed oil which they also contain. Hence we have another fact which serves to corroborate and explain the difference before noticed in the mode of action of the oil and the entire seeds.—(*Répert. de Pharm.*, and *London Pharm. Journal*, February, 1861.)

IV.—*Poisonous Effects of Euphorbia Peplus.*

The following case, recently communicated to the Academy of Sciences by Dr. D. Bernard, will also illustrate the disastrous effects which may result from the empiric employment of the indigenous euphorbiaceous plants :—

A lady, following the advice of an old woman, cut some stems of *Euphorbia Peplus*, and applied the milky juice flowing from them to her already swollen gums. Instantly her mouth became so much inflamed that the doctor, when he saw his patient, thought that the inflammation was due to the action of mercurial medicines.

For several days the pain was intolerable, and wrung cries from the patient, who, deprived of sleep and unable to drink, was a prey to indescribable agitation.

By the aid of lotions combined with emollient and opiate injections, and by the employment of revulsives and laudanumized poultices, and assisted especially by time, the action of the caustic became weaker, the inflammation gradually diminished, and at the end of eight days the cure was nearly complete.—(*Ibidem.*)

V.—*Poisoning by the Berries of Solanum Dulcamara.*

While we are upon poisonous agents, we may notice a fatal case of poisoning which occurred lately near Toulouse. It happened to a child who had swallowed some berries of *Solanum Dulcamara,* and who, notwithstanding the greatest care which was given to it, died the same day.

This fact is important, as some authors—among others M. Guibourt—have proved that the plants of the genus *Solanum Dulcamara* possess far less poisonous properties than those of the genera Datura and Atropa, which belong to the same natural order.—(*Ibidem.*)

VI.—*Arsenical Poisoning.*

A remarkable case of poisoning by arsenic was tried at the Durham Assizes, in which it was proved that the accused person, the wife of the deceased, purchased a quarter of a pound of arsenic, ostensibly to cure her husband's toothache. It was sold to her labeled mercury. He died shortly after taking some medicine which she administered, exhibiting symptoms of arsenical poisoning. In his stomach was found one hundred and fifty grains of arsenic. It was proved, on the one hand, that she had contemplated her husband's death; but it was proved also, on the other, that the deceased was in the habit of using the "mercury," that is to say, the arsenic, for his teeth, and that she had seen him put a quantity of it into a lucifer box, and take a spoonful from it, into which he had dipped his finger, when he had wetted it, and rubbed it into his gums. The teeth of the deceased were proved to be very much decayed, but no irritation of the gum, or sign of the recent application of arsenic, appeared. Of course no conviction could follow after such evidence.—(*Dublin Medical Press,* and *Journ. of Materia Med.,* February, 1861.)

VII.—*Poisoning by Cyanide of Potassium.*

F. Venghauss obtained from the blood of a man, who had died from accidentally drinking a solution of cyanide of potassium, free hydrocyanic acid, but found none therein in combination. The stomach was free from the free acid, a mixture of protosulphate and sesquichloride of iron having been given as an antidote, too late, however, to save life.—(*Arch. d. Ph.,* clii., 138, 142, and *Am. Journ. of Pharm.,* May, 1861.)

PATHOLOGICAL ANATOMY.

BY JOHN H. PACKARD, M.D., OF PHILADELPHIA.

I.—*Warty Degeneration of the Vocal Chords in a Child.* Reported by DR. MATTHEWS DUNCAN to the Medico-Chirurgical Society of Edinburgh.

When about five and a half years old, this child, a female, had what was considered a severe cold, and from that time her voice gradually lost strength.

When Dr. Duncan saw her, eighteen months afterward, she could talk plainly, but the sounds were feeble and husky. Her respiration, when full or hurried, was accompanied with a good deal of wheezing. A slight degree of injection and blueness of the face was always present, with an extraordinary expression of anxiety. Her cough was whistling and without expectoration; she was liable to sudden attacks of violent dyspnœa. In one of these attacks she died, having been affected with bronchitis also for about a week previously.

At the autopsy, "the site of the glottis was found occupied by a warty mass, having some papilliform projections, and especially on the left side a distinct polypus. The chink of the glottis was blocked up by tenacious mucus, and was itself extremely small, being a narrow fissure not exceeding two lines in length. The warty mass seemed to spring from the vocal chords, and to have grown upward in flap-like projections, having no connection with the adjacent sides of the larynx. Under the microscope, nothing but large, flat, nucleated cells could be observed in the diseased parts."—(*Edinburgh Medical Journal*, April, 1861.)

II.—*Mediastinal and Pulmonary Cancer.* By DR. J. WARBURTON BEGBIE.

A large, powerful man, fifty years of age, a quarryman, had been in good health until about three weeks before he came under Dr. Begbie's care. Without any exposure to cold, he began at the time mentioned to be affected with a short, dry cough; soon afterward he noticed that his breathing became hurried and panting, especially at the close of a day's work, when he ascended a steep incline. In a few days, the cough and breathlessness obliged him to give up work. His countenance was anxious, fuller on the right side than on the left; this fullness affected the right side of the neck and upper part of the chest. The cough was barking and imperfectly formed; the signs on auscultation and percussion most marked toward the upper part of the right side of the chest, and indicative of some consolidation of the lung-tissue. The pupils were alike, and the sight good; there was some headache and giddiness. Hydrothorax and œdema of the right upper extremity became very clearly developed in the course of about two months. Paracentesis was performed, and repeated at intervals of two or three days, until it had been done ten times, more than 550 ounces of fluid having been removed in all. About two weeks before he died, cerebral disorder was manifested; his mind wandered; he had sometimes double vision; his sleep was broken, and he had momentary attacks of unconsciousness. The immediate cause of his death was exhaustion.

An autopsy was made by Dr. Haldane. "On removing the sternum a large mass of encephaloid cancer was disclosed lying under the upper third of that bone, stretching into the right lung, nearly the entire upper lobe of which was involved, while the bronchus was greatly narrowed; the lower lobe of the right lung was much compressed. Serous fluid to the extent of several ounces occupied the right pleural cavity, and at several places the costal and pulmonic surfaces were united by pretty firm adhesions. Some old tubercle was found in both lungs. The mediastinal cancer surrounded the vena cava and large thoracic veins; on the right side it extended downward to the immediate vicinity of the heart. The other organs of the body were healthy; microscopic examination revealed distinct cancer-cells, particularly in the milky juice yielded on pressure from the mass in the lung."—(*Archives of Medicine*, No. 7.)

[This case presents some interesting features, but the statement that "old tubercle was found in both lungs," if correct, embodies the most important point in the account. A powerful, robust man, fifty years old, had "uniformly enjoyed good health, and never suffered from any serious disease" until the onset of a cancerous affection of the mediastinum, probably primarily of the bronchial glands. When had the "old tubercle" been developed? What was its position in relation to the cancerous deposit? Surely the existence of tubercle and cancer, side by side, the organs generally being healthy, *if positively certain*, deserved more than a mere passing mention.—P.]

III.—*New Formation of Lymphatics in the Connective Tissue of the Pleura and Lungs, in a Case of Puerperal Fever.* By M. E. WAGNER, Professor at Leipzig.

At an autopsy on a woman, aged twenty-two years, who had died on the sixth day after delivery, there were found beneath the right pulmonary pleura numerous grayish cords, extending a distance of nearly 2 inches (54 millimétres) from the edge of the lung. The largest of these ramifying cords were about 1 millimétre ($\frac{1}{30}$ inch) in thickness; some were of uniform calibre, others nodose.

The author at first took these cords to be distended lymphatic vessels; but on examining the parts when hardened in alcohol, he saw that these supposed vessels were destitute of proper walls, and constituted canals bounded merely by fibres of connective tissue. The greater number of them were very short (a few millimétres only in length) and ended abruptly. Their contents consisted of granular cells about as large as colorless blood-corpuscles, of a small number of nuclei, and of some albuminous molecules.

The author would trace these newly-formed canals to the corpuscles of the connective tissue, and particularly to those of that lying beneath the pleura; and thinks that this observation goes to prove the origin of the lymphatics from the cells of connective tissue and their prolongations.—(*Gazette Médicale de Paris*, Dec. 15, 1860; from *Archiv für Physiologische Heilkunde.*)

IV.—*Anomaly of the Heart in an Infant.* By M. HERVIEUX.

M. Hervieux exhibited this specimen to the Société Médicale des Hôpitaux, in Paris. It was taken from a child three months old, admitted into the Hospice des Infants Assistés about a month previously. At that time it was in a state of almost complete asphyxia, but recovered so as to take the breast again. Three other attacks of dyspnœa ensued, and on the thirtieth of March the child was seized with complete suffocation, accompanied with cyanosis, loss of temperature, in short, with all the signs of asphyxia; the most vigorous treatment was unavailing, and death took place in twenty-four hours. On opening the thorax, the thymus body was found still very large, so as to cover the heart, which was itself twice the size of the child's fist. The heart being laid open, an abnormal communication was found between its auricles, and a complete absence of the septum between the ventricles, so that there was in fact but one ventricle; there was likewise but one artery, the aorta, the pulmonary artery being deficient. When this artery is wanting, the pulmonary circulation is commonly effected in one of three ways: either by a rudimentary pulmonary artery arising from the aorta, by the persistence of the ductus arteriosus, or finally by means of the bronchial arteries. In the present case, there is neither a rudimentary pulmonary artery nor a persistent ductus arteriosus; and we must admit, although it cannot be demonstrated by an injection, that the bronchial arteries have carried on the circulation.

M. Roger had sometimes, in cases of abnormal communication between the cavities of the heart, perceived a bellows-murmur over the base of the heart during life, so that he could diagnose the lesion which was subsequently proved to exist by post-mortem examination. M. Hervieux had detected no such sound in the present case.—(*Gazette Hebdomadaire*, April 12, 1861.)

V.—*Disease of Aortic Valves Proving Fa'al; Enormous Ascites from an Unusual Cause.* Under the care of DR. D. J. CORRIGAN.

Thomas Hewson, aged thirty-seven, a dock laborer, was admitted into the Whitworth Hospital, on November 22, 1860; he was almost moribund, his face livid and slightly jaundiced, his breathing greatly oppressed, with incessant cough and viscid expectoration. The whole body was anasarcous; the abdomen enormously distended with fluid, very tense, but free from tenderness on pressure. Percussion over the heart was abnormally dull, as was also that over the lower portion of the lungs. The heart's impulse was increased in extent and force, and a double *bruit de soufflet* could be heard especially over its base. Crepitant *râles* existed in the lower part of each lung. The pulse was rapid, and had the rolling character often observed in patency of the aortic valves.

He had been attacked three years before, while at work, with shivering, dyspnœa, cough, and dropsical swelling of the feet and legs; was in the hospital, but recovered sufficiently to go back to work. A year later he had an attack of what would seem to have been peritonitis; this also passed off entirely. About a year after that he noticed an enlargement of his abdomen, and was twice tapped for it at Guy's Hospital, with temporary relief. When admitted into the Whitworth Hospital, he had been suffering for six months from dyspnœa and ascites. His life had been, for nearly twenty years, one of hardship, exertion, and intemperance.

The diagnosis made out was aortic insufficiency, hypertrophy of the heart, congestion, and œdema of the lungs; the ascites could not be accounted for. No treatment was of any avail; he sank and died in a few days.

At the autopsy, "the heart was enormously hypertrophied, weighing twenty-six ounces. The mitral valves were slightly thickened; the aortic were greatly puckered, and quite inadequate to closing the aortic orifice; one of them was perforated, the orifice being ragged and warty. The aorta was diseased, especially in the portion nearest the heart, for the extent of an inch or so. In this situation some calcareous deposits could be felt. The lungs were congested; sections from the lower portions sank in water; and numerous apoplectic clots throughout them explained the immediate cause of death. On laying open the abdominal cavity, and permitting the inclosed fluid to drain off, a most remarkable condition of the parts contained came into view. The whole mass of abdominal viscera were bound together and to the walls of the cavity by extraordinarily developed false membranes. These passed in all directions, varying for the most part from one-sixteenth to one-eighth of an inch in thickness, and in some regions in the form of bands equal in dimension to the columnæ carneæ of the left ventricle. The most remarkable of these bound the stomach to the under surface of the diaphragm. The agglutinated mass of abdominal viscera was with great trouble removed from the body, and at its upper portion, with some difficulty, the liver was recognized; it presented a perfectly globular form, and was reduced to less than one-third its normal dimensions. On making a section, the organ was found perfectly healthy as to structure, but compressed, by a dense false membrane in which it was inclosed, to such a degree as to impede almost completely the transit of blood through it.

"The history of the case, already detailed, corresponded accurately with the post-mortem appearances. The first attack was probably aortitis; and although recovered from, laid the foundation of the cardiac disease, which ultimately proved fatal. The second illness was peritonitis, and the contraction of lymph effused on the surface of the liver, gradually advancing, was the cause of the ascites; the hepatic circulation being obstructed by *pressure from without*, in no less degree than we are accustomed to find it in cirrhosis, by contraction of the capsule of Glisson or *pressure from within*."—(*British Medical Journal*, March 9, 1861.)

VI.—*Emboli of the Pulmonary Artery.* By MM. TROUSSEAU and DUMONTPELLIER.

MM. Trousseau and Dumontpellier have arrived at the following conclusions as the result of a lengthened series of researches on the subject of emboli of the pulmonary artery:—

1. Fibrinous obstructions of the pulmonary artery are lesions of very common occurrence.

2. Spontaneous coagulations in the pulmonary artery, formed *in situ*, may generally be distinguished from migratory clots derived from the peripheral venous system.

3. There are thus two varieties of pulmonary coagulations—one *primary*, due to some disease of the lung, such as pneumonia, œdema, apoplexy, etc.; and the other *secondary*, resulting from the migration of a peripheral venous clot.

4. Every condition of the system which causes an increased amount of fibrin in the blood, is favorable to coagulation.

5. Local causes of a mechanical nature may act as determining causes.

6. Organic diseases of the heart are most influential in inducing obstructions of the pulmonary artery, partly by the general cachectic condition of the system which they induce, and partly by the mechanical obstacle which they offer to the pulmonary circulation. (Quoted from *L'Union Médicale*, Dec. 13, 1860.)

These conclusions are opposed to the opinions of Virchow, who would make all coagulations in the pulmonary artery depend upon the impaction of a clot detached from vegetations on the lining membrane of the right side of the heart, or from some part of the peripheral venous system. In the *Gazette Médicale de Paris* for Jan. 5, 1861, a case of obstruction of the pulmonary artery is recorded, where there were also contraction with incompetence of the mitral valve, and likewise pneumonia, pulmonary apoplexy, and œdema. Here there was every reason to believe that the obstruction was not due to the impaction of a plug. The obstruction to the circulation through the left side of the heart led to the formation of a large fibrinous clot in the left auricle, which was found adherent after death. This offered an additional obstacle to the onward progress of the blood, the result of which was, first, œdema of the lungs, and then pulmonary apoplexy. This extravasation of blood completely arrested the capillary circulation, and caused a stagnation, first in the smaller, and then in the larger arterial twigs; the clots gradually assuming a fibrinous character. Such appeared the most probable interpretation of the phenomena of the case.—(*British Medical Journal*, Feb. 23, 1861.)

VII.—*Syphilitic Disease of the Liver.* By FRERICHS. (Klinik der Leberkrankheiten, vol. ii.)

According to Frerichs, the syphilitic process manifests itself in the liver in three different forms: 1. As simple interstitial hepatitis and peri-hepatitis. 2. As gummy hepatitis (*gummöse hepatitis.*) 3. As waxy, amyloid, or lardaceous degeneration. All three forms may be found in the same liver, or may exist independently. The last of the three forms is also produced by other cachectic conditions of the system, such as the tubercular diathesis, and the cachexia induced by intermittent fever; and is pretty generally recognized. The first two are less known.

In the bodies of persons who have suffered from constitutional syphilis, white cicatrix-like depressions, of a folded or radiated form, are often found upon the outer surface of the liver, the capsule of which is usually at the same time much thickened, and firmly adherent to the surrounding parts. Sometimes there is only a single depression; at other times, the depressions are so numerous as to give the liver an irregularly lobulated appearance. On careful examination, these depressions are found to be formed by fibrous tissue extending from the thickened capsule more or less deeply into the interior of the gland, the secreting tissue of which is atrophied. The fibrous tissue, in most cases, is dense and tendinous, and contains but few blood-vessels. The larger branches of the portal vein, bile-ducts, and hepatic veins, as a rule, remain uninvolved, except in very rare cases, where the cicatrixes extend deeply into the interior of the gland. Hence this lesion is rarely the cause of either ascites or jaundice.

In the second form, the tissue of the cicatrixes just described contains whitish or yellowish nodules, of a rounded form and dried appearance, usually varying in size from that of a linseed to that of a bean, but occasionally as large as a walnut. Under the microscope, these nodules are found to consist of oil-globules, granular matter, cells loaded with oil, and areolar tissue. They thus resemble in their structural characters the gummy nodules (*Gummiknoten*) which are met with in the subcutaneous areolar tissue, beneath the periosteum, in the testicle, and in other localities, in cases of constitutional syphilis.

In both these two forms of disease, the hepatic tissue intervening between the cicatrixes or nodules is either normal in its character, or more commonly in a state of fatty degeneration. In many cases, also, there is a characteristic hypertrophy, resulting from enlargement of the lobules, which compensates for the loss of substance.

The implication of the liver must, in Frerichs's opinion, be classified with the phenomena of the tertiary stage of syphilis.

The symptoms which accompany the first two forms of the disease are usually so obscure that no suspicion is entertained of the liver being diseased, until the *post-mortem* examination. On the other hand, the symptoms of the waxy or amyloid form are so marked that there is rarely much difficulty in its diagnosis. —(*British Medical Journal*, Feb. 23, 1861.)

VIII.—*Rupture of the Common Duct of the Liver; Formation of a Cyst containing Bile; Death on the Fifty-third Day.* By T. M. DRYSDALE, M.D., of Philadelphia.

A boy, aged thirteen, while standing near a wall, was pressed violently against it by the tongue of a hand fire-engine, which struck him in the right hypochondriac region; he was so seriously injured that he had to be carried home. When seen by a physician, eight hours after the accident, he was extremely prostrated, and complained of intense abdominal pain; he had vomited a good deal of blood. His alvine discharges, as well as his urine, were mixed with blood for several days; the former then became very light in color, the latter dark and muddy, with a green tinge. Slight jaundice was noticed on the third day; he vomited his food, and there was increasing swelling, but no pain or tenderness of the abdomen.

When Dr. Drysdale saw the patient, several weeks after the accident, he found him emaciated and deeply jaundiced, with a pulse of 130, feeble and frequent, a cool, dry skin, laborious and hurried respiration; unable to lie down, restless, with an anxious face, and with intense pain in the right hypochondrium on deep inspiration. On percussing the abdomen, which was much distended, and the superficial veins full and prominent, it was found to yield a clear sound above a line running from the lower border of the eighth rib to the umbilicus; below this line the sounds were dull, except over the ascending colon. The chest was dull on percussion at the lower part of the right side, very clear, with puerile respiration, on the left. Some urine drawn off by means of the catheter was found to contain bile, as did also the fluid drawn from the abdominal cavity in the operation of tapping, which was resorted to a few days subsequently.

The relief derived from the tapping was but temporary; the boy sank, and died in two or three weeks.

An autopsy was made, twenty-eight hours after death. "The body was extremely emaciated; the skin mottled, and of a purplish color. Over the chest, abdomen, and various parts of the body, were large ecchymosed patches, which existed during life. The abdomen was enormously distended. On exposing the abdominal cavity, it appeared to be almost entirely occupied by a large cyst, which was in some parts of a greenish color, in others of a light brown. It was feebly adherent, anteriorly and laterally, to the abdominal walls, as high as an inch above the level of the umbilicus. In handling the cyst, its walls proved to be softened and easily torn, permitting the escape of a large quantity of the same kind of fluid as that removed by tapping.

"On tracing its relations, it was found to dip into the pelvis between the bladder and the rectum, being attached to the peritoneal surface of both of these organs by weak adhesions. It filled the abdominal cavity as high as the umbilicus; and on the right side pushed the diaphragm before it, ascended until it reached the nipple, displaced the small intestines, the cæcum, and the transverse colon, which was folded upon itself, and pressed them all to the left side of the vertebral column. The liver was pushed toward the left side, the right lobe downward, bending it upon itself.

"The upward progress of the cyst in the median line was arrested by the root of the mesentery; winding around which, it rose upon the left side, beneath the intestines, as high as the diaphragm, thus forming a tumor of the horseshoe form.

"The transverse mesocolon was spread over the upper part of the cyst, to which it adhered. On the right side the tumor projected into the epigastric region, anteriorly to the liver, which it concealed, except a small portion of the left lobe, which was firmly adherent by its entire upper surface to the diaphragm. The stomach adhered to the liver, and the pyloric orifice was compressed between this organ and the cyst.

"The peritoneum was discolored wherever it touched the cystic walls; but it presented no signs of inflammatory action, except where the cyst adhered to the surrounding parts. The cyst and liver were so intimately adherent that they were removed together from the body for examination.

"The adhesions between the cyst and the liver were broken down until the transverse fissure of the liver was reached, where the cyst became continuous, in part, with the peritoneal surface of this organ. The gall-bladder was found beneath the cyst, filled with bile, and of the normal size.

"A careful dissection showed the tumor to be a continuation of the peritoneal covering, both of the liver and of the ruptured ductus communis choledochus, the rupture occurring three-quarters of an inch below the cystic duct. The ragged end of the duct projected a quarter of an inch into the cyst. The tumor was lined over the greater part of its internal surface with a layer of lymph."

Dr. Drysdale regards the cyst in this case as formed by the escape of bile into the areolar tissue between the two layers of the gastro-hepatic omentum, this portion of the serous membrane undergoing a regular process of development, so as to constitute the cyst-wall. He quotes from Cooper's Surgical Dictionary a case, probably analogous to his own, but in which the patient recovered, so that the diagnosis could not be absolutely verified.—(*American Journal of the Med. Sciences*, April, 1861.)

IX.—*A Case of Ossification of the Muscles.* By WILLIAM SKINNER, M.B., Lond., etc., of Manchester, Eng.

This singular case is that of a boy thirteen years old, the second of eight children of healthy parents. He was quite healthy until about six years ago, when a swelling was noticed at the back of his neck, without any known cause.

"This disappeared in about a week, another being observed behind the right shoulder. Three weeks later the arms gradually became so stiff that for about three months they were firmly fixed, and the boy was obliged to be fed. He, however, somewhat improved in this respect, and for some time past has been able to feed himself, although with much difficulty. From that time to the present various lumps have formed in different parts of his body, these being principally about the spine and chest; and whenever the boy receives a blow it is invariably followed by a similar swelling. Their appearance is preceded by pain, tenderness, and slight feverishness.

"The condition of the boy at the present time is as follows: He stoops somewhat; the shoulders are contracted; there is no motion in the right joint and very little in the left; the arms cannot be extended, and are in a semiflexed position, crossing the abdomen. The chest is narrow, very much flattened on either side at the junction of the ribs with their cartilages, and these somewhat nodulated. There is no movement of the chest with respiration. The abdomen and lower extremities are well developed, the latter straight, without signs of rickets. There is no movement in the spine, and the scapulæ are fixed; the buttocks and lower extremities present nothing abnormal. On manipulation a number of small projections are felt over the ribs. The right pectoral muscles are completely fixed, and converted into a hard, bony substance. The lower edge of the greater can be traced from a nodule below the right nipple, crossing the axilla, forming a hard and sharp ridge, which is continued into the biceps as far as its insertion into the radius; a number of little bony nodules may be felt along its course, and a long irregular splinter of bone behind it. The muscles of the forearm do not seem to be affected. On the left side there is much the same condition of things as on the right, except that the muscles of the forearm are here beginning to be more or less fixed, and there exists a long, sharp, bony ridge from the outer condyle to about two-thirds of the length of the forearm.

"Posteriorly, on the left side of the neck, and apparently in the trapezius immediately after its origin from the occiput, is a projection of hard, bony substance, about the size and shape of a pigeon's egg. Lower down, between the angle of the scapula and the spine, is a large, hard, and irregular mass. In the dorsal region, at about the tenth and eleventh vertebræ, where the trapezius takes its rise, and apparently formed in the angle of this muscle of the left side, is another hard and somewhat movable mass. It is angular in shape, and extends upward on the side of the spine about one and a half inches, and outward and upward, in the lower fold of the muscle, about one inch. Moreover, in tracing the lower edge of this muscle to its attachment to the scapula some hardness is felt, and here and there sharp spiculæ of bone-like matter. On the right side, about two inches below the lower angle of the scapula, is another hard and irregular projection, about the size of a large egg, the last which has made its appearance; apparently it is incorporated in the lower edge of the latissimus dorsi. In the lumbar region, on each side, hard, bony plates occupy both spaces. The buttocks and lower extremities are quite free from disease, excepting one small nodule, about the size of a common nut, situated over the right os calcis, at the insertion of the tendo Achillis."

This boy exhibited no other structural or functional abnormity. He had taken iodide of potassium, but without any beneficial effect.

"Examples of this peculiar disease may be found recorded by Mr. C. Hawkins in the *Medical Gazette*, 1843 and 1844; by Dr. Rogers in vol. xiii. of the *American Journal of the Med. Sciences;* by Dr. Wilkinson in the *Medical Gazette* for 1846; by Dr. Testelin in the *Gazette Médicale de Paris* for 1839. In the museum of the Royal College of Surgeons of England there is a fine specimen of the disease, the description of which is given in the *Pathological Catalogue*, vol. v. p. 138, No. 3367."—(*Med. Times and Gazette*, April 20, 1861.)

X.—*Hypertrophy of the Connective Tissue of Nerves.* By M. DECHAMBRE.

Among the lesions of the nervous system whose true nature has been elucidated by microscopical study, there is one—the hypertrophy of the connective tissue interposed between the nerve structures—which has acquired more and more importance from recent researches. First described by Rokitansky, this lesion has been made the subject of interesting study by a Swiss physician, M. Demme. We have already called the attention of our readers to the observations of Rokitansky, and would simply recall to their minds that this illustrious pathologist showed the existence of hypertrophy of the connective tissue within the brain, spinal marrow, and different cranial and spinal nerves, and that he traced to this lesion certain paraplegias, various forms of acute convulsions, tetanus, and the general paralysis of the insane. M. Demme, in a work entitled "Pathological Anatomy of Tetanus and of certain other Disorders of the Nervous System," has confirmed in a great degree the opinions put forth by Rokitansky, and has extended the list of affections in which functional lesions of the nervous system may be referred to the condition alluded to. M. Demme compares this alteration to that commonly known as *cirrhosis*, and ascribes to it, in particular, hydrophobia, and certain amauroses observed in patients with Bright's disease.

We do not, of course, hold ourselves responsible for all these assertions, notwithstanding our high regard for their author; but we would mention a case which seems confirmatory of M. Demme's views in regard to the amaurosis of albuminuria, and which was reported to the Swedish Medical Society by Professor Malmsten and Dr. Gyllenschjöld. It was that of a man aged sixty-six, who had labored under albuminuria for several years. Having suddenly lost the sight of the right eye, this patient was attacked quite as suddenly, three days later, with marked amblyopia of the left eye. Only very large objects could be discerned, and this state, which was accompanied by no lesion appreciable by means of the ophthalmoscope, persisted until death. At the autopsy the kidneys were found waxy and granular. The retinæ showed none of the lesions which have been from time to time pointed out in the amaurosis of albuminuria; but the optic nerves, at the point where they penetrate the sclerotica, were almost entirely destroyed by a peculiar growth of connective and elastic tissue. This mass, in which the nerve elements were as if choked, had arisen upon the edges of the sclerotica and in the neurilemma, and prolonged itself, in the form of fibroid extremities, between the nerve cylinders. Here was evidently a hypertrophy of the connective tissue, (*Bindegewebs-Wucherung* of the

Germans.) M. Malmsten added that he had met with this lesion in three subjects, who had become amaurotic at an advanced stage of Bright's disease, and whose retinæ, as well as the other membranes of the eye, were free from appreciable change. Aside from ecchymoses and infiltrations of the retinæ, therefore, the lesion of the optic nerve, pointed out by Demme and Malmsten, should claim the attention of physicians, as one of the causes of the amaurosis of albuminuria, the relative importance of which is yet to be determined.

This case will be of interest in connection with those of M. Von Graefe, where hypertrophy of the interstitial areolar tissue of the optic nerve, with sanguineous injection of the papilla, was consecutive to cerebritis and to intracranial tumors.—(*Gazette Hebdomadaire*, April 12, 1861.)

XI.—*A New Theory as to the Nature of Corpora Amylacea.* By Professor MAYER, of Bonn.

Professor Mayer has remarked that these bodies bear a striking resemblance, in their appearance and reaction with iodine, to the small corpuscles which are found in the joints of tape-worms and in the interior of the cystic entozoa; and in the brain of a sheep, which had died of the staggers, he found, both in the neighborhood of the cœnurus and at a distance from it, an immense number of corpuscles, closely resembling the corpora amylacea found in the brain of man and other mammalia. He likewise discovered an innumerable quantity of similar bodies in the brain and spinal cord of a measly pig. He has not yet had an opportunity of examining the human brain in the bodies of persons who have suffered from tape-worm, but he is of opinion that the corpora amylacea are intimately connected with the presence of entozoa in the system, and that in fact those bodies are nothing more nor less than the corpuscles found in the joints of tape-worms and in the interior of the echinococcus and cœnurus.—(*British Medical Journal*, April 6, 1861; from *Virchow's Archiv*, band ix, hft. 1 and 2.)

XII.—*Deposits of Nitrate of Silver in the Skin and Glands.* By Dr. SIBBALD, of the Royal Edinburgh Asylum.

Dr. Sibbald exhibited to the Medico-Chirurgical Society of Edinburgh microscopical specimens taken from the liver, choroid plexus, and costal cartilages of a man who eight years since took nitrate of silver in solution, during a period of eighteen months, for the cure of epilepsy. After death all the tissues were found to be more or less filled with pigmentary deposit.—(*Edinburgh Medical Journal*, April, 1861.)

Bi-Monthly Periscope.

THE WEAR AND TEAR OF MEDICAL LIFE.

An Indian officer, who has traveled over a large portion of the habitable globe, remarked the other day, that in whatever quarter of the world you may happen to alight, there you are certain to meet with a British medical man. In the remote islands of the Indian Archipelago, as well as in the backwoods of the Far West, an English doctor never fails to present himself! They are, happily for the human race, spread like a fan all over the earth. The smallest colony has often more than one. In the most unfrequented localities you find an English physician or surgeon settled as a permanent resident. Ask in the hour of difficulty and danger for a doctor, and, sesame! a son of Great Britain stands by your side! How is this? What inducement can have led the adventurous student, or the experienced practitioner, to migrate so far from his native land? What a history of individual chances, hopes, fears, shame, or necessity must it not be that can have driven or seduced the well-educated, if not the well-connected and ambitious aspirant, from the grand arena of the social world, where merit is rightly rewarded, wealth procured, and a name achieved! What destiny has provided for the numberless outcasts of mankind, "remote from consequence, and unknown to fame," to be thus skillfully cared for in the season of sickness, the day of calamity, and the hour of death? What a boon, and how little dreamed of in this huge metropolis, overwrought with the business of life, and merged in the vortex of headlong egotism or inexorable toil!

But it is part of the nature of the Saxon race to migrate from their home. It belongs to that peculiar spirit which rules the progress of our "Ocean Isle," to look beyond its shores, and to wend its way to the most distant climes, never more to return, perchance, to the spot from which it sprang. Of the numbers who pass their examinations weekly at the several medical boards, how few, comparatively speaking, ever settle down to practice in their native land! The greater number are never heard of again from the hour in which they obtain their diplomas to that in which their names are inserted in the obituary of some local or more widely circulated newspaper. Perhaps even this last mark of respect is denied them; and they finish their days in some distant clime alone, unknown, and unregretted even by those with whom they started in the morning of their prime. Premature disease, contracted, perhaps, during the period of their studies, cuts off not a few; the ocean or the desert swallows up others; disappointment and the icy hand of penury and want stifle many a fine genius and worthy soul; while the army, navy, and the mercantile marine might tell the twice-told tale of all the rest. A remnant remains at home. Of this remnant, alas! but a small section surmounts the stern obstacles raised up against their strenuous efforts at advancement; and, out of the whole number, a few, a very few, survive to gain a satisfactory competence, or to rise to distinction in their profession.

Do you see yonder lean man, gray headed and intelligent, walking down St.

James's Street, clad in rusty black, and gazing at you with his cold, gray eye, as you quickly pass him by? Ambition, fatal ambition, marked him for her own. He came from a provincial town where he was well known, and, with every legitimate diploma in his pocket, duly signed, sealed, and delivered by the examining authorities, started in the great race to compete the prize among the millions of the modern Babylon. Ah, foolish effort! "Dark was his morn of life, and bleak the spring." The great world passed him by, and heeded not the talents buttoned up within his vest, nor heard the cry of his young ones pining away in a large house in a fashionable quarter of the town. He has grown gray in quest of a reputation perpetually fleeting from his sight and eluding his tremulous grasp.

In the back room of a paltry lodging, in the deserted street of a fashionable watering-place, stretched on a water-bed, palsied and dying, lies one who not long ago resided in London, sat in professional state to receive the numerous patients that beset him daily, or rolled along the streets in his chariot to keep his appointments with due propriety and punctuality. How jaunty was he then! How little did he foresee the inroads that would be made upon the slender texture of his nerves by the constant excitement of the mind, the broken nights, the anxious days, and the precarious tenure of maintaining professional infallibility at the top of its bent. And then he wrote a book. The book sold, and extended his reputation, and added to his toil. He wrote a second, and the second sold as well as the first. He was at the acme of his hopes. A London celebrity was before him, when, lo! his eyesight failed in the zenith of his years, and he withdrew to linger out his term on a small pittance in blind obscurity. Adversity has no friends. The crowd that had hung attentive on his lips, forgot that he had ever existed, and passed on to the adulation of their next new idol.

And this aged gentleman, gray headed and shabby genteel, with wisdom on his brow and discretion in his gait—how is it that this venerable epitome of medicine has never plucked a leaf from the golden bough of fame, nor taught the public to credit what he really is—an able, a learned, and a useful man? But such are the chances of the medical life. The pretender too often carries the day; and loud assertion and bombast prevail over solid merit, modesty, and truth.

The pursuit of medicine, however, is not to be blamed for casualties such as these. Most likely they are the lot of humanity, and belong to that class of severe teaching to which we, as moral beings, are subjected in the pilgrimage of life. Success is a rare result. The most gifted are not always the most successful. It belongs to a happy combination of things, over which we have no control, to be able to bring forward and produce before the world, in their proper light. those high qualities with which we have been endowed, and to offer them for general service in the most agreeable and acceptable manner. The kindest of patrons can do little or nothing for us, unless we can do much for ourselves; and the most fortunate concurrence of events is fruitless without moderation, sagacity, and the consummate perception of time, circumstance, and place.

In the routine of life, the practice of medicine affords a subsistence to about thirty thousand medical men in this country. Perhaps the average incomes of the whole taken together range from £500 to £700 a year. The majority are general practitioners; a class of men endued with a comprehensive and strictly practical education. The health and safety of the million are in their keeping.

The sanitary management of private families is regulated by them. The unions, the workhouses, the provincial dispensaries, and hospitals are officered by them. By them, the poor are waited on in their own dwellings; and a vast amount of disease is attended, alleviated, or cured, by their unpaid, if not unrewarded ministrations. The public are scarcely alive to the fact of how much the health of the community at large is in their hands, and how conscientiously and ably they discharge their duties. By night and by day, in summer and winter, the general practitioner beats his rounds, till the very stones might prate of his whereabouts. Such a man is always useful, and invariably in demand. His judgment acquires ease and perspicuity from incessant experience; his manners become chastened and toned down by the sight of suffering, in which he is deeply concerned; and he has no time to play the pedant, or to affect the ostentation and folly of the age. His behavior assumes an air of gravity, and his countenance expresses that moral grandeur which is the result of a mind engaged in the slow prosecution of truth, the steady and daily exercise of benevolence. He becomes, generally, prematurely old. His task never ceases. He seldom indulges in a holiday, either at home or abroad. Each day brings its duties, which cannot be omitted without detriment to himself or others; and, above all, the labor of every day must pay for its own expenses. As to his realizing a fortune, it is out of the question. He may save enough to keep the wolf from the door in his old age, if he live to be old; or for his family, if, as is often the case, he die early. He may catch a fever, and die; or fall into ill health from constantly breathing the contaminated air of sick-rooms and hospitals; or, in fine, he may be worn out in spite of the strongest constitution. But as to his acquiring a fortune, in the sense in which a railway contractor, or a successful stockbroker, merchant, or lawyer makes one, and counts his hundreds of thousands of pounds sterling, and maintains a London establishment and a country-house, and procures a commission in the army for his son, or sends him to college, and introduces his blooming daughters among the aristocracy of the land—why, fortune, in this sense of the word, is, as far as the medical man is concerned, simply ridiculous, and signifies nothing. The successful speculator never works for nothing; his prosperity is the produce of his turning everything to profit. He never deals with the poor, of whom he has no practical knowledge. He does not believe in poverty. He looks upon it as a disgrace to be poor.

Follow the medical man through yonder dismal alley, climb the creaking stairs after him, enter the dark, dirty, unfurnished room, and attend him to the bedside of that poor woman sinking from disease, and who repays him with nothing better than her prayers. Depend upon it, those prayers are written in the Book of Life, and will, on the great day of account, outshine the glitter of the luckiest millionaire upon earth. The doctor's pay is frequently nothing more substantial than a prayer; and, then, if you return home with him, you will see how modestly he is forced to live, and how hard he works in order that he may live at all.

By himself, the general practitioner cannot possibly earn more than £1500 or £2000 a year. With a partner, of course, it may be doubled; but by himself, with a few rare exceptions, £1500 a year is, perhaps, the maximum he earns. For, it must be borne in mind, that there are not more than a certain number of hours in the night and day, and a certain portion of time must be allotted to sleep and refreshment. There remain, then, not more than twelve hours for incessant occupation, and this is a much longer space of time than can be endured, or persisted in by those whose constitutions are delicate and minds sensitive. It is not possible, therefore, to visit more than a limited number of patients every day; and considering that patients generally reside far apart from each other, and cannot be dismissed in less than a quarter or half an hour each, if the case be serious, it follows, that allowing for the distance of ground to be traveled over between house and house, not more than three patients on the avarage can be seen in the hour, or thirty-six patients a day. In unhealthy seasons, he may count as many as fifty on his list; but, in general, not more than thirty. Of this thirty, one-third pay nothing; and the rest pay more or less according to their means; but even at its highest estimate, this will seldom produce more than £2000 per annum, subject to a heavy set-off on the score of business expenses. And recollect that, to realize this sum, there must be no suspension of labor. It must be *de die in diem*—one and the same from the first of January to the thirty-first of December. Few constitutions are equal to this prolonged exertion. The health sooner or later gives way. Very few persist in carrying on so extensive a practice for many years in succession. They are forced to withdraw from it; and fortunate, indeed, if, in so doing, they have something of their own to fall back upon. If not, they must go manfully forward, and die in harness.

There are numerous instances of medical men living on to a green old age, and cheerfully continuing the practice of their profession to the last. They have realized sufficient to enable them to keep their ground, and when occasion requires it, to take things easily. But each healthy old man, who has weathered the storm, represents how many who have been wrecked, stranded, or gone adrift!

For the most part, young medical men commit a great mistake on first starting. They overhouse themselves. Their establishment eats them up. They have not the courage to live in a small way. Then they marry too early. It is a virtue on their part, and speaks volumes in their favor. But house expenses are certain, and professional returns uncertain. Children must be fed: servants must be paid. The wife likes the habits of a lady, decorates her rooms, and receives her friends, while her husband lives in the streets, that he may sleep in a mansion. For a mansion it is to him, that vast pile of bricks and mortar, for which he pays an enormous rental, and which he has furnished beyond his need. For the sweets of life are unknown to him. He toils only for his daily bread. He has no time for visiting. He can never receive properly. His occupations unfit him for doing so. His real post, and the one in which he shines, is the sick chamber of the wealthy and the hovels of the poor. Beyond their precincts, he is nobody. How can it be otherwise? If he is a man of fashion, he is unfit for his profession; or, if he be a philosopher, he is unfit for fashion. Add to these eccentricities and burdens, an equipage—a shining, well-turned-out equipage! This is the climax of folly that has brought many a general practitioner to the ground. It is time enough to ride in a carriage when you have realized capital, or should be lucky enough to possess some private means of your own. Only, private means alters the question, which, as we are now looking at it, is one of pure, unaided, professional ability.

It has often occurred to us, that most medical men would be the better if they remained single. We know that it is opposed to the received opinion on the subject, and we own that it has its inconveniences. But we feel confident that, in the present state of society, in which expensive luxury forms a constant element, it is next to impossible for a general practitioner to support a proper appearance in the world from nothing more than the proceeds of his professional exertions. It is the married life that urges so many to work themselves to death. They cannot bear to see their family less than they should be. Consequently they are ever on the fret. They have no leisure to sit down and think. They cannot and must not do so; and it is owing to the cares of matrimony that many, who would otherwise have been philosophers, devoted to their profession, end by becoming nothing better than routineers or professional tradesmen. In moments of real illness and danger, the public do not ask whether the doctor rides or walks, is married or unmarried. All they require is that he should be at hand when he is wanted, and should he capable of performing all that is required of him.

There is something transcendently noble in the practice of medicine. Gold and silver are not to be compared with it, neither are they its proper reward. It is humanity in the highest meaning of the term—practical charity, which, we are assured, covers a multitude of sins; "I was sick and thou visitedst me:" here is thy reward, not in this life, but the next.

A youth is dazzled by his first sight of the medical world. He sees a carriage driving by, the speed of the horses overcome with toil, and the brow of a distinguished surgeon or physician peering through the window. It is a recently created medical baronet. He is hastening to an important consultation at that great house within those portals at the corner of that street. Every one knows that its illustrious owner is at the point of death. The distinguished son of Esculapius dashes through the entry; the liveried servants receive him at the principal entrance. He crosses the marble hall, ascends the broad staircase, and enters the sick chamber. The family medical attendant is already there. The patient moans from within his canopied couch. The apartment is richly carpeted; the hangings are damask; the furniture is *en suite*, and the lofty windows are shaded by appropriate draperies. The consultation is long; the opinion grave; the fee large. The whole scene bears the impress of the grand and the imposing. It is the great world in its richest attire, convulsed in one of its saddest moments. The little moments drop away, like the sands in the hour-glass, and the great man dies. The emblazoned epitaph on his ancestral tomb in the distant village church sets forth his name and lineage, "to whom related and by whom begot."

The next year the distinguished physician dies also, from overwork; and is gathered not unto his fathers, but is deposited in a vault, newly excavated in the midst of strange graves, in a newly planned joint-stock cemetery. The youth does not see the issue of events, or will not see them. He only sees, in his mind's eye, the dashing carriage and the happy face within it. And certainly it is a vision never to be forgotten. Silently he breathes a fervent wish that he may live to be the same, although his favorite poet might have warned him that every scheme of happiness ends only in disappointment, as every form of life terminates only in death.

The pageant of the world is but a dream. It moves forward in procession to a slow and stately measure, while first one and then another figure is snatched from its ranks, which are always changing but are never changed. The phantoms keep coming and going, but the scene remains.

The English physician, both of former and recent days, has always played a prominent part in the history of medicine. He is classed among the aristocracy. Individually he is recognized as a gentleman. His mode of education and style of thought entitle him, in a certain sense, to the homage of his brethren, and of being looked up to as a person the most proper to be consulted in cases of difficulty and danger in the last resort. All, indeed, do not succeed equally well in this respect. Many fail. The common difficulties of living beset them as well as others. A thousand trifles may be wanting to accredit the most accomplished among them to the countenance of public esteem. People are fastidious. They pick and choose as best it suits their fancy. They please themselves, they care not how, and they know not why. They are sometimes wrong, and then they resent it upon others instead of upon themselves. But, upon the whole, the *vox populi* is right in the end; and the most deserving have seldom failed of their reward.

But the fortunate candidate for public favor is just as often the victim of success as he would have been of failure. The demand upon his intellect is stupendous. It is enough to crush the strongest head and break the stoutest heart. For he who leads must necessarily know all that is known by those whom he leads. Nay, he ought to know more than they do; for how can he advise them if he knows less? The infinite particulars of science are progressively on the increase. The particulars of yesterday are obsolete to-day, and those of to-day will be obsolete to-morrow. The leading physician must know them all. There is no use in pretending to know them. His knowledge must be absolute, and of the latest date. The feint would be detected at the first touch. It follows, therefore, that he must not only be an active practitioner, but a scholar and a student besides. What an exhaustive effort! What a gigantic struggle! At home, he must study and think hard; and he no sooner steps across his threshold, than he must travel *express* all over London, and from one end of the kingdom to the other. There is no time, when he can say, Hold, enough! There is no *sick-call* that he can refuse. He can never say, No! for the first refusal from caprice or fatigue marks the summit of his reputation, and sounds the note of his decline.

Add to all this, he must sustain the character of his profession by his pen, whenever occasion calls for his doing so; and he must sustain it honorably, ably, and critically. It is expected of him that he should give to the world the fruits of his experience in the shape of a goodly volume. Most likely he lectures once or twice a week, and visits the hospital of which he is one of the staff. His day is occupied from morning till night; his hours are frequently interrupted by the calls of friendship and humanity; and society requires that he should be well versed in the political exigencies of his professional brethren, and ready to step forward and maintain their cause in the public arena of the world.

His life is a struggle against mighty odds. Ceaseless anxiety is counterbalanced by restricted pecuniary results. "Every guinea involves personal service, and every prescription is a spreading out of brains upon paper." His life is intensified to the last degree, and consumes itself with amazing velocity. His high repute and well-earned fame weigh with a deadly pressure on his frame. Many sink under it, many more perish in the vain attempt to raise it. All aspire to it. A few sustain it.

In the character of the physician we include that of the surgeon also; for though he does not profess to be so liberally educated as the physician, yet there is no reason why he should not be so, and in fact many are. In practice he is not a whit less zealous and trustworthy than his colleague. The one solicits the same public confidence, and shares the same favor, if not the same honors, as the other. In professional credit they are equals. They discharge different functions, but their object is the same.

There are few sciences in which the one and the other have not shone. There is no occasion of pestilence or national calamity in which they have failed in their duty. They are spoken of as well in the colonies as within the limits of the United Kingdom. The exceptions in which they have betrayed their trust, and tarnished the lustre of their name, are so few, that they establish the rule. Their heroism is unquestioned. They have faced the thunders of a naval engagement, or the field of battle, the trenches, and the siege; and have merited by their personal bravery the same badge of distinction as that which decorates the breasts of those by whose sides they have fought and bled.

Such men deserve much, and their pay ought to be in proportion to their talents and devotion. But is it so?

The incomes of fashionable practitioners are quoted at fabulous rates. The vulgar ear delights in marvels. It is taken for granted that they sweep the board. But so far is this from being the case, that, setting aside private fortunes with which we have no concern, the most esteemed men have come into notice late in life, and reached their professional climax in the decline of age. At the age of fifty, the late Dr. Bright was still a candidate for popular favor. And, then, as to the incomes that are made. As with the general practitioner, so with the physician, he cannot make the day longer than it is, nor pretend to more endurance than the rest of mortals. If he sees twenty patients at home in the morning, and thirty after he goes out, it is as much as he can manage, and about the same as that of his inferior medical brother whom he meets in consultation. Nor do all these fifty leave a guinea a piece behind them; some leave none: others leave more; and if the fee for a distant visit into the provinces be large, it is barely more than a compensation for business missed or lost at home, to say nothing of the bodily fatigue undergone in a long and hasty journey, and the responsibility incurred by delivering judgment on a case from which there ought to be no appeal. *Five thousand pounds* a year, or *three thousand pounds* at least, is not more than is requisite to maintain a first-rate London establishment in necessary working order for an extensive consulting practice. Doubtless, much larger incomes than this are made; but we ask, how many surgeons and physicians of note are making as much as this, or as little?

The most painful portion in the history of a physician's life are the early years of his commencement, which are passed out of sight, and in straightened circumstances. The bitterness of this period darkens the spirits, and throws a deep shadow across the brightest futurity.

Can civilization proceed at its present speed and intensity? Can life subsist under it? Will it not eventually wear itself out? We think not. Facts declare themselves in our favor. Longevity is upon the increase: statistics prove it. The health of the community is good. Where seven or eight died formerly, only two die now; where pestilence once raged, it is now extinct. The race improves. Stature and strength are greater than they used to be. Free institutions, freedom of thought, and religious as well as civil liberty, enlarge the sphere of vision, extend the faculties of the mind, and multiply the resources of happiness and enjoyment. Cloudy as the political horizon may seem, yet the gleam of light along its margin is bright and encouraging. The privileges of mankind are more fully appreciated, and less likely to be invaded or oppressed by domestic or foreign aggression, than at any former period of the world's history. Steam and the electric wire are working wonders in a way that cannot be disputed. Their beneficial operations will not cease. They are public property; and their utility is too well understood ever to allow of their being laid aside and forgotten.

In regard to ourselves, as medical men, is the prospect less cheering than we could wish? At present we are overtasked, or at least they are upon whom the world has bestowed the meed of merit. But was it ever otherwise? Must it not continue to be so? The pet of the public lies at the mercy of an exacting patron. A favorite is never his own master; and when we complain of having more favor than enough, let us not forget those who repine because they are neglected, and get less than they want. In a certain sense the evil is irremediable. For

> "Some must laugh, while some must weep;
> So trips the world away."

And the ambitious will suffer, as well as achieve, the most. Except in a few favored instances, "the cool, sequestered vale of life" is out of the question; and none but the old, the disabled, or the timid, would covet the seclusion.—(*Medical Critic and Psychological Journal*, January, 1861.)

PROFESSIONAL TRICKSTERS.

Can it be possible that the honored and honorable diploma or license in physic should ever become a stalking-horse for trickery? Is it reasonable to suppose that the doctor would at any time be influenced by the petty sentiments of spite and envy, in his conduct toward his professional brethren? As a philosopher, or at least as a man of common sense, (a less pretentious, but by no means less creditable character,) it might be imagined that he was too intimately acquainted with the chances of life ever to think it worth while to feel anything but the deepest interest in their honor and welfare. Rightly appreciated, the success of another adds lustre to ourselves. The distinguished conduct of each conduces to the distinction of all, just as the prosperity of all contributes to the well-being of each. In this light there would be no place for envy, and the noblest of professions, standing among the first in science as it is the first in benevolence, disinterestedness, and fraternal kindness, would not be sullied by those bickerings and heartburnings which too commonly beset the course of every-day life. But, alas for human nature!

In yonder row of spacious mansions resides, no matter whence his wealth, a very rich man, who has purchased two of the houses and thrown them both into one. He is so rich that he consumes upon himself alone more than twice as much as any other ordinary human being, and, singular to say, enjoys better health than most mortals. His grooms, his horses, his furniture, and his household, all bespeak the man of money. He is a rare child of fortune, and fortune is good so long as she lasts. But what of that? He is sometimes ailing, and in the hour of need, real or imaginary, resorts to the aid of medical skill. What a pluming of pinions among the rising M.D.'s! What a shuffling of feathers among the eager general practitioners! What tiptoe excitement to learn upon whom will fall the patronage of one who is as much beneath them in intelligence as he is above them in wealth! Of course, only one can be selected. The rest bite their lips and retire. The great man takes a dislike to the one he has chosen. He turns him off and calls in a second, who is in turn dismissed as summarily as the first. Both the first and the second were men of approved talents and probity; but the great man does not care for that; they did not suit him, and he puts them aside at a moment's notice. He at last falls in with one to his entire satisfaction, in the person of an ignoramus as clever as himself. It is a decided hit; they were made for each other; and Dives and Ignoramus go hand in hand. The squad of the rejected look on and wonder, but it is a wonder to no one except themselves.

In that well-furnished nursery lies a sick child, tended by its officious nurse, and watched by its sensitive mamma with continued and restless solicitude. The care bestowed upon the infant is out of all proportion to the exigency of the case. The child is ill and may possibly die, but will, under ordinary care and attention, in all probability recover. The medical man who has charge of the case is a well-informed and experienced practitioner, perfectly aware of the contingencies of the ailment, and calmly alive to the whims and fancies by which he is beset. His little patient lingers on; his credit is on the wane. Another practitioner is named of infallible skill, particularly in cases of this description; and he is called into consultation along with the family medical attendant. At the appointed hour, a carriage and pair drive up to the house; no knocker is raised, for fear of a noise; only the door-bell vibrates gently; and in walks the pattern M.D. He is a tall man with an obsequious stoop, and his knees slightly bent. His hair is brushed back; he wears gold spectacles, a white tie, and a black suit. There is no creaking of his shoes, and his manner is bland and soothing. He hangs over the crib of the dear sick child in a solemn attitude of observation; touches it lightly, listens to its breathing, feels its tiny pulse at the wrist, and then, quietly looking up, asks the old practitioner, who is standing by and looking on, whether he has given his little patient *Tous les mois*—a panacea at that time only just introduced. The answer is in the negative. What?—Not!—replies the pattern, with an affected look of surprise; not given *Tous les mois?* *Tous les mois*, nurse; *Tous les mois*, my lady—turning to the agonized mamma—*Tous les mois* will cure your child! The old practitioner is dismissed, on the score of ignorance, and under the judicious use of *Tous les mois* the child recovers.

There are tricks in every trade, but of all tricks, professional pedantry is the most detestable. It has it all its own way. The party duped can have no insight into the secrets by which he is guided in the management of his property, his soul, or his life. He must trust implicitly to the integrity and skill of his professional adviser, whom he flies to in moments of the last resort. It is in the embarrassment of such occasions that the trickster succeeds. There is the opportunity of putting himself forward, and he seizes it with adroit avidity.

The *monstror digito prœtereuntium* is a vanity common to all sorts of professional persons—the painter, the musician, the poet, the medical man, and artists of every description. It is gratifying to have ourselves pointed out as we pass along, and hear it said, that is he: *pulchrum est digito monstrari et dicier Hic est*, as Tacitus says, speaking of the orators. It is a venerable folly, sustained by classical authority, countenanced by Cicero, and quizzed by Horace. A slave nudged the aspirant for public favor in the side, (*fodiat latus*,) and whispered in his ear the name and title of those who met or passed him in the way. It is the same now as it was then. The rising medical man does not indeed retain a nomenclator at his elbow, but he does what is equally as effective, for he publishes a book to make himself known, and he rides in a carriage to let himself be seen. The world will not step out of its way to look after you. If you are not known, you may as well be lost or dead. Unadvertised, you go for nothing. You must proclaim your own merits, and put forward your own pretensions, with the best grace you may, or else make up your mind to subsist on modesty, truth, and small means for the rest of your days.

The competition which such a line of conduct necessarily provokes engenders the heartburnings and petty rivalries that ruffle the social surface of the medical world. It is the old story—there cannot be two Cæsars in the same camp, nor two Kings of Brentford in the same village—*omnis potestas impatiens consortis*, and in the medical profession this is particularly the case. There can be no partnership in medicine, for it turns upon personal merit; if one succeeds the other fails, and the one that fails envies or hates his successful rival. Consequently, unless the mind and temper be extremely well regulated, the egotism and self-sufficiency of the medical character are almost proverbial. Who ever supposes that doctors were framed for the love of one another? No one, unless he be a simpleton or a novice. Men of the world suppose no such thing. They take it for granted that two of a trade never agree. Hence it is that, though unfounded in fact or reason, medicine holds so low a place in their esteem. Without giving themselves the trouble of examining the essential difference between charlatanism and science, they *lump* the whole together, and regard it all as a mystery or pretense, which they must use as well as they can, whenever the hour for having recourse to it is forced upon them. Were it not for this adverse impression, medicine would long ago have gained the ear and secured the attention of government, upon the ground of its being a practical science of the highest national importance.

People are misled by appearances. That general practitioner you see driving along in his open barouche was educated at a small preparatory school, served his time in an apothecary's shop, passed his examinations, and is now playing the fine gentleman. He never attends a servant, nor any inferior person—*i.e.* an unpaying patient, except as an act of grace. No one could be more timid than he was on his first commencing practice. A child might have whipped him with a straw. At this critical juncture he besought the aid of one much older, if not wiser, than himself, and in him found a friend who fulfilled indeed the adage of being a friend in need. Night and day he beset his friend's door, which was always open to his call, and there he found, what he required, help in his necessities, consolation for his alarms, and the assurance of his final success. The hour of success arrived as it had been predicted; but no sooner had it arrived than he kicked the ladder that had helped him up from under his feet, mounted the platform, as it were, by his own unaided efforts, and stood alone. Now he lords it among the best of his fellows. Only a few are good enough to be countenanced as his equals. His manners and deportment are supercilious and overbearing. He takes the upper hand with his brethren, except those to whom he thinks proper to bow, to cringe, or to court. Colbert, in the reign of Louis XIV., did the same, and so did Sir Andrew McSycophant, in the *Man of the World.* It is by no means a bad game, although it sometimes fails egregiously. As to his absolute knowledge and acquirements, they are as shallow as shallow can be, but perfectly suitable to that class of delicate cases in which the married and unmarried in brocade and finery are supposed to rule supreme. His behavior is what is emphatically styled *sugary,* and he is a lady's man in every sense of the word.

The puppets that strut upon the stage of the world are as numerous and amusing in medicine as they are in any other profession, trade, or calling. Perhaps more so, because the practice of physic ministers directly to the self-love and egotism of its votaries. None but his admirers and friends seek the popular practitioner; he never knows his enemies, who never consult him. He moves in a charmed circle, within the sphere of which he meets with nothing but adulation, and beyond which he never steps. He is a pet in the fullest meaning of the word. His little world cannot live without him, till it has changed its mind, and then he must learn to live without it.

The stage upon which he struts has its loose boards, which sometimes slip from beneath his feet before he is aware of it. It is his ignorance of the jeopardy in which he is placed that makes him forget himself and pretend to be something great. He cannot see, nor does he know, that so long as his career lasts, he is nothing better than an actor dressed up for the hour to suit the nonce. He calls down the plaudits of the house whenever he appears on the boards. But let him quit the scene, and walk the streets by daylight as a private man, and he will find that no one knows him in his plain clothes. The applause which made him giddy was due to his office, not to himself. The next that treads in his steps will succeed as ably as he has done, and fail or fall as quickly as himself. Professional friendship is the expression of public confidence. As such it is invaluable, since it is, in fact, only another term for character and reputation; but overrate it, and you will find to your cost that, like the ass in the fable, you have made a false step by leaping into your master's lap.

There is a ripe season in every one's life, which soon comes to a close. The summer solstice is brief. The best man has his day. The best actor may linger too long upon the stage. The *vivas* of yesterday will be re-echoed by the *à bas* of to-morrow.

The same shield has its two sides, the golden and the leaden one. We have been looking at the lead; now let us see the gold. In an age which was none of the brightest Charles II. did not hesitate to reward the author of the *Religio Medici.* and the good and quaint Sir Thomas Browne still adorns the list and library of the Royal College of Physicians. The writings of Sydenham are the best comments on himself, and his worth has obtained for him the inestimable title of the Father of English Medicine. The evening of life closed in upon Boerhaave, and found him in the vale of years still studious and religious, endeavoring to dispense for the maladies of others that relief which he had failed to procure for himself. It is superfluous to expatiate on the virtues of these great men. They are known to all the world. But if there were giants in those days, the men of modern date are not pigmies. The names of Babington, Bailey, Cooper, and Abernethy are as household words upon our lips; and their successors, Brodie, Bright, Watson, Copland, Todd, and others, whom it would be as invidious to omit as to mention, deserve no less a meed of praise. Their career is graceful and attractive, because it is their own. They are what they are, and no change of fortune could dwarf their just proportions. Medicine owes them everything. Good sense and good taste, sound learning and practical skill, modesty and worth, are qualities which compel universal respect, defy criticism, and outlast time.

Dignum laude virum Musa vetat mori.

(*Medical Critic and Psychological Journal*, April, 1861.)

OBSCURE TRUNK PAINS.

OBSCURE TRUNK PAINS; OR, CHRONIC PAINS IN THE ABDOMINAL AND THORACIC WALLS. By *James Jago*, M.D., Oxon, Physician to the Cornwall Infirmary.—The great multitude of patients who seek advice on account of obstinate pains in the walls of the chest or of the abdomen, and the obscurity that frequently hangs over the origin of their sufferings, must always claim the indulgence of the physician for any attempt to throw another ray of light on their modes of production. I shall, therefore, venture a few remarks on the subject, premising that these will be of an elementary character, chiefly aiming to show that the weight of the upper portion of the frame often contributes to engender sufferings in those parts, in ways not commonly suspected; and that thus there may be simple means at hand of affording relief in cases beyond the reach of drugs. While such is my main purpose, I may be tempted to illustrate the views submitted from collateral sources.

It is an old remark* that rheumatism is oftener found associated with the tendinous and aponeurotic continuations of muscles, especially at the junction of these with bone, than with the muscular fibre itself. And Dr. Inman, of Liverpool, has ably maintained† that much of the pains experienced in the structures now mentioned are due to a stretching of fibrous tissue by the contraction of muscle, or by its excessive tension produced by any other means. He elaborately distinguishes between the pains thus engendered in the muscular fibre, as cramp or spasm, and those resulting from strain along the line of osseous attachment, or line of union between the muscular and tendinous fibres. And he insists that in a weakened condition of the animal system the muscles are more liable to cramp than in a robust, and pain more likely to be felt along the said lines of junction.

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* Copland's Medical Dictionary, vol. iii. pp. 616–9.

† Spinal Irritation, or Myalgia, 8vo., 1858; second edition, 1860.

Now, I have no further exception to take against this doctrine, but that I do not think that it embraces the whole series of such kind of pains as it aims at accounting for. I would affirm rather, in general language, that all the tissues of the body in their several degrees become painful when they are either stretched or *compressed;* in other words, that there is a state of equilibrium for the structures throughout the animal frame, which is the only one in which they remain free from pain: that the amount of suffering consequent upon the disturbance of this balance of opposing forces depends ordinarily upon the extent of the displacement, or the time during which it is kept up, that is, making allowance for the higher nervous endowment of one part than another, and taking for granted that in such a case the structural points to which the nerves of common sensation or their ultimate subdivisions are distributed, alone to be squeezed or stretched; for if a nervous trunk be thus affected, painful phenomena will, of course, accrue, radiating beyond the point mechanically interfered with.

To explain what I have just stated by an example. In a position of ease, the hand rests pretty much flexed. But, if we spread it flat upon a table, we soon begin to feel inconvenience from the tension of its skin and other tissues. And if we close the fingers tightly upon the palm, we soon find their tops in the fist becoming sore.

Or I may take another example, which may be regarded as furnishing an epitome of the principles I wish to apply in this paper. The eyeball is a globe suspended, as it were, by its muscles, in a fatty bed, and rotated so gently and equably as to preserve usually its proper form. If we make the slightest pressure of the finger through the eyelid over the sclerotic coat, we become informed of the compression of the retina along the line of greatest flexure by a luminous image of the contour of the applied portion of the finger; while we feel pain along the corresponding portion of the ocular globe—the visual sentient elements in which the optic nerve ends, manifesting in this way the effects we experience in the tactile sentients. In like manner if we strain the eye by resolutely staring in a given direction, the orbital muscles warp the globe out of form, false impressions of light result, and the power of seeing external objects is almost obliterated, while the orbital muscles are thrown into spasm, insomuch that we have a feeling of soreness and fatigue in them, with a tenderness of the ball itself, for many an hour after the experiment. Even any lengthened exertion of the eyes in our habitual occupations is attended with such results in an appreciable manner.

These illustrations will, I hope, help to a readier apprehension of our peculiar liability to sufferings of this order in the regions of the thoracic and abdominal walls, if it shall be made to appear that these are very variously exposed to be forced out of the position of structural balance, and that force applied hereabouts in one part often entails a displacement of the greatest magnitude in some others, in a manner that is not usually thought of.

Let us imagine, as a rough approximation, all the human body, exclusive of the lower extremities, in the sitting posture, as a heavy lever or a beam revolving about the *tubera ischiorum*, as an axis or fulcrum. And let us assume that the centre of gravity of this beam lies between the middle of the *scapulæ*. Then in the upright sitting position the whole weight of the beam falls upon the *tubera*. In the horizontal the weight will be borne up—distributed—along the whole length from the head to the buttock. If we recline, so that the back rests at some point against a prop, we may find the portion of the weight supported by the prop, by drawing a perpendicular to the beam at the point of contact with the prop, and then a perpendicular to this line from the fulcrum, as also a perpendicular from the fulcum to a vertical line passing through the centre of gravity: when the pressure upon the prop will be to the whole weight of the beam, as the latter of the perpendiculars let fall from the fulcrum to the former. Thus, the nearer to the buttock the prop is placed, and the more the body is made to recline, the greater pressure falls upon the prop. While it is apparent that should we, while we sit, lean pretty much back against a single prop meeting the spinal column at any point whatever, a considerable pressure must be endured by that part of the body in contact with the prop, which is a general statement sufficiently accurate for the purpose of a practical essay like the present.

Now let us further assume that the back while we sit is supported entirely by a *couple* of props of equal height, and several inches asunder, bearing each, similarly, against one of a pair of ribs. In this instance pain from compression would be felt at the points of contact, as is obvious. But there result also certain secondary effects which, I think, we are apt to overlook. The two ribs are made to revolve, by the pressure, upon their vertebral articulations, and the numerous ligaments that bind them to the vertebræ and neighboring ribs are stretched, and pain is occasioned in those parts. In addition to which, this movement causes an alteration in the shape of the ring made—with the interventions of the vertebral column, their cartilages, and the sternum—by the pair of ribs. Had such a ring as this been of uniform texture and shape all round, one effect of letting it bear merely its own weight upon two of its under points, in the manner here imagined, would be that of flattening the ring above. In such a combination of structures as do exist in these rings, the result must somewhat differ. Yet we may be sure of this much, that in the case before us much displacement must occur along the most pliant part of the ring—that is, along the cartilaginous portion, and at the articulations of the cartilages with the sternum: for the costal rotation at the spine tends to bring the sternal ends of the ribs nearer to each other, that is, to bend them at their junction with the sternum, independent of the weight of the upper portion of the ring depressing that region. In other words, pain would be developed at other parts than those where the direct pressure is applied.

Had we placed the two props much farther apart, and so as to take the weight of the trunk at the back part of a lower rib on one side, and of an upper one on the other, consequences very similar to those detailed in the case of a *pair* of ribs must have ensued. The ribs would have been pressed in upon the lungs behind, the cartilages would have been bent, and the sternum itself—in young subjects at least—somewhere along the imaginary line drawn diagonally across it, that joins the articulations with the sternum of the two ribs selected. This may be regarded as a general sketch of what takes place in such an experiment; but it must not be forgotton that a pressure received by any rib will in some degree be transmitted to adjacent ones. And it can scarce need to be added that if our back be supported at more than two points, or even along its whole length, the effects here described will only be diminished in amount, and not be entirely obviated.

Now, in the sitting posture, if the support of the back happen to be a flat surface, as in a church pew or box in a theatre, the back rests against the shoulder-blades, that is, virtually the upper ribs; and, *a fortiori*, if the support for the back consists, as in most chairs, of a series of a few horizontal concave bars, the ribs are likely to have to bear, at a distance from their vertebral articulations, a large amount of pressure. In weakly persons such a posture produces—not to dwell on that occurring posteriorly—suffering in the *anterior* part of the chest, especially along the margin of the sternum. For not only from what has been stated must this happen, but, in addition, the thrusting forward of the shoulders renders the pectoral and great serrate muscles lax, and thus deprives the ribs of the support due to the elasticity of these inspiratory muscles, increasing the liability to the kind of inconvenience we are discussing; while a confined play of the respiratory movements is induced, entailing other evils. Even lying upon the back in bed—more completely still so if on a hard mattress without elasticity enough to expand itself decidedly against the spine along the interscapular gutter—will leave the scapulæ—that is, the upper ribs—to bear a weight at least equal to that of the whole thorax, and will occasion a strain along either margin of the sternal gutter.

Having considered some effects upon the thoracic walls of flexure in a plane perpendicular to the spine, let us now turn our attention awhile to flexure in planes passing through its axis.

We will take first the case of a person sitting on a chair whose back does not rise to his shoulder-blades. As he reclines, the centre of gravity of the beam falls above the point of support, and the beam is only prevented from lifting at the bottom by the weight of the lower extremities. Indeed, did we propose to break a stick over the back of the chair, we should put it under the same conditions, confine the end of the shorter branch, and apply our strength (the weight of the head and shoulders in the example of the beam) at the end of the longer one. We see the stick split on the side opposite to that which rests on the fulcrum, because the forces applied tend to lengthen that side, and strain most those fibres which are most remote from the fulcrum. Just so the whole line of tissues along the paths of the recti abdominis muscles and the sternum, from the pubis to the clavicles, are laid under extreme tension; the ensiform cartilage and the whole sternum is depressed toward the spine, and the pleural cartilages warped. And pain again befalls the region.

It may be appended that the actual *fixed* point at which the trunk curves backward is not where the spines of the vertebræ are in contact with the back of the chair, but rather at the posterior margins of the bodies of the said vertebræ, and that the spines gather nearer together and the skin of the back into transverse folds, as we may have observed the skin covering the stick, being broken as above, to do on the side next the fulcrum, because the fixed point, or the unstretched longitudinal fibre, is at the back of the stick itself. Again, if the sole transverse portion of the chair-back consist of one bar at the height, say of the root of the sitter's neck, unless great muscular effort be made, the weight of the loins and thorax would cause the trunk to become convex behind, just as occurs when we stoop to pick anything from the ground; and we know how liable such a stretching of the lumbar muscles is to be followed by crick, and that it always takes a good interval to recover from the sorenesss resulting from a prolonged stooping posture. But as the line that undergoes, in this instance, no change in length, is somewhere along the anterior edges of the vertebræ, the lower end of the sternum is brought much nearer than before to the pubis, the contents of the abdomen pressed up toward the cavity of the chest, and the abdominal muscles project forward and cover the ensiform cartilage, so that this, by their support, takes some of the weight of the head and neck, and may thus be flexed, depressed toward the spine, carrying with it the lower costal cartilages of the left side, rather than those of the right, which are supported by the liver. So that this very pain may be produced in the district so much exposed to this misfortune.

If we press upon the sternum directly, as in leaning over a table to write, we may push it toward the spine and bend the attached cartilages. If we curve the trunk laterally, as in leaning on a table sideways, we stretch the opposite oblique muscles, and may occasion pain either at their upper costal insertions or at their lower pelvic. The same effect may follow by lying in a bed; for on the side on which we lie, by the weight of the lumbar portion of the trunk, the natural concavity of the waist tends to become obliterated; for this portion of the body is now primarily supported at the brim of the pelvis and lower true ribs.

I must here conclude my anatomy of trunk-pains, as I believe I have indicated the fundamental way in which the commonest of the chronic kind are generated. It were an indefinite task to work at exhausting the subject. The weight of the arm may make the muscles of the shoulder ache; and it is conceivable that one might write a separate history of the sufferings of all the muscles of the trunk. Besides, the effect of the compression or weight of clothes might be expatiated upon. Such effects as these, I presume, are likely to be detected with little difficulty, by those familiarized with scrutinizing the sources of pains in the thoracic and abdominal walls, by first eliminating those that may arise in any of the modes above described. As far as I have here gone I am persuaded that I have not transgressed the bounds of clinical experience, and that there is not one of the ways of suffering just pointed out which I have not met with in several instances, and seen relieved simply by precautions against the strain that occasioned it.

To give cases in detail would only be repeating in the form of narratives the foregoing explanations, so I will content myself with a simple sketch as a type of the class. I once had to think for a young gentleman of rather studious habits, of a slender, symmetrical figure, but enjoying good health, except that he was rendered miserable by attacks of pain at the sternum, and along the cartiages of the ribs, commonly about the lower end of the sternum, though sometimes higher up—a condition of things that existed for two or three years in spite of tonic and other medical treatment. But he having himself observed that he had once been extremely afflicted after pressing the epigastrium against a table in drawing, it soon came to light that all his sufferings arose from posture. Even lying upon his back in bed was found to bring on a fit of pain, and resting his back against any support that threw the weight rather upon the ribs than the spinal column did the same. He now soon got rid of all his troubles by habitually supporting his back, when studying, at the spine. I omit to state how, as I mean to consider the best mode of doing this in another part of this paper.

Perhaps it may not be superfluous to subjoin, that such a relative depression of a rib with respect to those next it, as may happen when it has to bear undue pressure in some of the modes above treated of, may sometimes expose the trunk of an intercostal nerve to squeezing or stretching. These nerves are, indeed, curiously lodged in grooves along the lower borders of the ribs, which guard them from accident; but they traverse a short space from the spine to enter these, and do not seem to lie absolutely safe from mechanical injury. I am not sure that I have not met with cases of neuralgia shooting along their paths from this cause, wherein no spinal deformity existed. It is the nerves most unprotected against pressure and cold that appear most liable to neuralgia. I am confident I have known sciatica to be engendered by a habit of sitting sideways, in a partially recumbent manner, on a sofa or chair, so as to squeeze the sciatic nerve at its emergence from the pelvis into the thigh; and several instances in which a fit of tic douloureux has followed a nap upon a book or some hard thing for a pillow. Nevertheless, these nerves cited in illustration are oftener affected by their exposure to great differences of temperature, since even the sciatic, by careless sitting upon surfaces which rapidly conduct heat, are subjected to such vicissitudes.

In juxtaposition with the reflections with which this paper sets out, though I would be chary of applying them too far, I have reason for surmising that there are some ailments whose seats are among the abdominal or thoracic viscera themselves, instead of in the trunk walls, which can only be understood by such rudimentary considerations. I will touch upon two or three rarer examples which have fallen under my own notice.

Awhile since a woman of about thirty-six years of age became a dispensary patient of mine, for what, *prima facie*, seemed to be a form of gastralgia common enough among such patients. She asseverated that she literally feared to eat a full meal, so greatly did she suffer pain at the pit of the stomach, which radiated along the lower border of the thorax for an hour or more after a meal; that she had become very thin in consequence of enforced abstinence, and that several medical men had failed to give her any relief. Though her affirmed loss of flesh seemed justified by her appearance, and her look of distress was great, yet she had not the aspect nor any of the prominent symptoms of organic disease of the stomach; there was no chain of evidence to convict it of scirrhus or ulcer. It was not until I had exhausted in vain all the current remedies for facilitating digestion that, upon a more deliberate sifting of the symptoms, I ascertained the curious fact that if she went to bed immediately after eating supper, this meal gave her but little inconvenience. Thereupon I directed her to lie down after all her meals, and to eat good solid dinners of animal food and vegetables, drinking bottled porter with them. With some difficulty I got her to persevere in this practice, and she was not many weeks before she was convalescent. Now, we cannot imagine that mere distention of the stomach occasioned the suffering, because the recumbent posture could not obviate such an effect; nor that there was an abrasion of the mucous membrane so placed in the organ as to be brought more into contact with the food in one posture of the body than another, for whatever may have been fancied to the contrary, the pressure of the atmosphere must keep the stomach always closed tightly upon its contents. It seems to me that the pain was evolved through the *weight* of the meal—by traction upon the diaphragm at the cardiac orifice possibly, but mainly by traction upon the liver by the lesser omentum, and thereby upon the xiphoid and costal cartilages uniting with it. I would compare the case with the two following.

About the same time, I had under my care two cases parallel to each other in all essential particulars. The first was that of a miner who had been for more than half a year under treatment for what he described as a most severe pain along the margin of the cartilages of the lower ribs on the right side, extending from the edge of the liver downward, through the abdominal wall, and pentrating, he fancied, inward. He shrunk when I touched the abdomen over the parts referred to. It was only with difficulty he could stand upright, or walk, or rather crawl, about. Being unable to discover anything amiss with the liver, or indeed, at first view, any general sign of ill health, except lack of flesh, I commenced a devious examination of his body, and, to my surprise, found that he had effusion into the pleura, not on the side complained of, but on the left. Posteriorly and laterally the bottom of the chest on this side was much duller on percussion than on the corresponding portion of the right side, notwithstanding the hepatic dullness here existing. At the same time respiration on the left was barely audible at levels, where on the right it was very so; and fremitus on the left was almost as barely perceptible, while the intercostal spaces protruded. By putting him under a succession of blisters over the diseased region, instead of, as had before been done, over the region of pain, with iodide of potassium, diuretics, and then tonics administered internally, the physical signs of effusion soon began to diminish, and with this the pains in his right side.

A few months afterward a once stout and lusty smith, who had been working in London, returned to Cornwall in a very weak state, wasting and laboring under excessive pain at the right hypochondrium, and spreading over the abdomen, which pain he accused as the sole cause of his troubles. He had been perfectly well until about six months before, when, after an imprudent exposure to a piercing cold draught of air, he became suddenly ill, his suffering settling soon entirely in his right side. This man's story and attitude reminded me so forcibly of the foregoing case that I at once examined his chest, and discovered more strongly marked signs of pleuritic effusion on the left side than in that of the miner—a condition of things which, as in that instance, had been overlooked. He commenced, too, to recover from the moment the true seat of disease was besieged.

With respect to the propagation of the pain to the opposite side in this pair of cases, it seems to me that the mode might have been thus: The fluid in the left pleural sac would have nothing to sustain its weight beneath the diaphragm but yielding viscera, consequently the left half of that muscle would be depressed below its usual region; but this could not happen without dragging downward the right half also—that is, not without pulling downward upon the liver, and exerting a force to rotate it on its anterior border from the costal cartilages which cover it. In this way not only would these cartilages themselves be warped, but the ligaments of the liver would be made abnormally tense, and therefore their peritoneal continuations along the parietal abdominal wall be unduly stretched, as well as such tissues as it lines. I venture on this conjecture on taking *common* survey of the three cases last introduced, under guidance of the more general principles on which this paper proceeds.

Infra-mammary Pain.—I must emphatically repudiate the idea that I would offer the preceding propositions as a key for opening the mysteries of *all* the aches we meet with in the thorax and adjacent parts. In such an affection as hysteria, for example, perturbations of all the other parts of the nervous system are far too transparent for me to go so far as to say that the tactile nerves, or such nerves, if they be other than these, whose office is to inform of violence done to the tissues, may not also be morbidly affected. Nevertheless, let us see whether the pain, under the classic designation heading this paragraph, admits of a plausible explanation by the principles submitted. In the autumn of 1858 this pain was made a topic of discussion in the medical weekly publications. Dr. Inman, Dr. Fuller, Mr. Holmes Coote, and others took part in the debate. I do not know that I can do better than take the main points at issue from their statements.* The first of these writers, in reply to the second, who had asked him why the seat of a chronic pain is more commonly in the left than in the right side, remarks: "At one period I thought I could trace some connection between the locality of the pain and the position commonly adopted by the sufferer; but after a more extended inquiry I have been obliged to consider the facts referred to as inexplicable in the present state of our knowledge."†

Mr. Coote‡ comments upon this correspondence. Premising that it is not to be doubted that it may have "more causes than one," he affirms that he has noticed it to be "one of the very earliest and commonest symptoms of incipient lateral curvature of the spine," and he reminds us that it had been recognized in this point of view since the days of Delpech, (citing his "Orthomorphie," tome ii. p. 10, 1828;) "a constant pain, somewhat vague in its seat, which takes place sometimes in the side of the chest below the mamma, sometimes in the epigastric region. This pain has no known cause; its duration is usually constant, but it is infinitely variable; its periods of calm and exacerbation have nothing regular; there is no disturbance of the functions of the organs in the seat of pain; nothing quiets it, nothing relieves it. It is accompanied by slow, progressive, and inexplicable deterioration of the state of health. It is evidently allied to something grave but quite clandestine." Delpech then instances a girl of eleven years thus afflicted, who, by means of a plumb-line, was found to have a slight lateral curvature. "The greater frequency of spinal curvature," Mr. Coote subjoins, "may explain in some measure the obedience of infra-mammary pain to the same law." While thus suggesting that it may not improbably be muscular, he does not indicate by what mechanism the curvature or the pain inclines to one side rather than the other.

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* I have not access to the *second* edition of Dr. Inman's "Myalgia;" I am therefore unaware if he has therein made any new observations upon this subject.

† British Medical Journal, November 27th. ‡ Ibid., December 4th.

However, as Mr. Coote had (as recently as in the *Lancet*, October twenty-third of the same year) given a graphic sketch of the course usually taken by spinal contortion, I will continue to follow him: "The curvature generally commences in the upper dorsal region, and extends directly to the right in one even sweep up to the junction of the lower dorsal with the lumbar vertebræ; then the direction of the articulating surfaces is altered, and the movements of the spine change from the lateral inclination to the antero-posterior movement, as in springing; a second curve forms in the lower region to the left, accompanied with a rotation and twisting of the vertebræ." He then proceeds to quote from the plates and descriptions of M. Bouvier, (Physician to the Children's Hospital, Paris,) explanatory of the packing of the viscera found on dissection of cases of confirmed lateral curvature of the spine. Thus, in what he calls *le premier plan*, that of the above type, the latter says the "lungs are apparently not much deformed, when viewed anteriorly. But the right is reduced in height, its base being pressed by the abdominal viscera; the left has its inferior lobe compressed between the ribs and the heart. The heart is voluminous, and closer than natural to the ribs of the left side. The liver is much deformed, deeply fissured, and, as it were, mounted (*à cheval*) on the crest of the ilium."

Now, it is worthy of consideration whether we may, by chance, find the cause of the preference of the line of lateral curvature for one side of the body rather than the other, in a difference in the compressibility of the viscera that are lodged against the parietes of the respective sides. If there be any just foundation in this notion, the only organ within that seems at all capable of affording a relatively greater support is the liver. This is a firm, resisting mass, filling the whole of the right hypochondrium; and if the spine becomes drooping and weak, or its muscles no longer able to sustain the upper portion of the body erect; if the vertebral column begins to yield, so that a weight that it should carry becomes cast upon the viscera, it seems not absurd to regard it as not improbable that the circumstance of the left lower ribs and cartilages covering compressible lung and stomach, while the right are supported all along within by a much firmer body, may be the means of causing the chest to arch inward on the left rather than the right.

The details of M. Bouvier give strong countenance to the idea that the left pleural cartilages are more liable than the right to be warped out of shape by any of the modes suggested in the beginning of this paper. And thus the left side will be more frequently the seat of pain than the other. By whatever cause of ill health the general strength fails, this liability will be more remarked. This seems a necessary consequence of the manner of stowing the more massive viscera in the chest and belly. We may assert this much without pushing our conclusion so far as to assume that infra-mammary pains can be of no other order. I can well conceive that the site of the liver may determine that we are not left but *right* handed, because the pectoral and other muscles that move the arm or shoulder upon the trunk have, through the hepatic support, steadier points of resistance on this side than the other; for this organ manifestly plays an important mechanical as well as a more purely glandular part in the economy.

Having so nearly approached the subject, perhaps I may be permitted to say a word or two on the thoracic distortions in rickets. Dr. Jenner* speaks thus: "The deformity of the greatest interest to the physician is that of the thorax. The back is flattened. The ribs are bent at an acute angle where the dorsal and lateral regions unite. At that part the lateral diameter of the thorax is the greatest. From it the ribs pass forward and inward to the point where they unite with the cartilage; on that line the lateral diameter of the thorax is the least, the cartilages curving outward before turning in to unite themselves to the sternum. The sternum is thrown forward, and the antero-posterior diameter of the thorax is abnormally great."

"The great determining cause," he afterward subjoins, "of the thoracic deformity is the atmospheric pressure; this is aided by the elasticity of the lung," and the fact that the more resistant viscera underneath are obstacles to recession of the chest-walls where they lie. It appears to me difficult to account for the "acute angle where the dorsal and lateral regions unite," or the flattened back, by such diffusive pressure as must be produced between the air without and the air-containing elastic lung within. On the other hand, it is certain that if the rickety child be let to lie much on its back, which, from its inability to stand and sit upright, would inevitably happen, the weight of the chest must so press upon the softened ribs as to tend to bring the spines of the vertebræ and those of the shoulder-blades on the same level, or to flatten the back. Again, the mere weight of the costal cage of bone and cartilage tends to flatten it in front, (above,) so that this cage would tend to fall flat in front and to crack sharp off at the sides. Now, when we take into consideration with these facts the obstacle to recession of the cage in front furnished by such solid parts as the liver, heart, and spleen, as Dr. Jenner himself does, I think it may be worthy of reflection whether this is not the simple history of the development of the deformity in question. Allowing that some deviations must be expected to be produced in the form of the chest by weights thrown upon it when other postures are assumed, the principle involved in this explanation would be in accordance with Dr. Jenner's general mode of accounting for rickety distortions in the limbs, which he ascribes to their weight or the weight of other parts bearing upon them. He remarks, "in excluding muscular action from all direct share in the production of curvature of the long bones in rickets, I am, so far as I know, unsupported by any authority;" this observation, it may be implied, he would extend to the chest, as he cites Rokitansky's opinion of the thoracic deformity being caused by a want of power in the inspiratory muscles, and moots no other hypothesis but his own.

Finally, returning from these collateral meditations, I will venture a word as to the practical use of such considerations as form the fundamental reasonings of this paper. If suffering is occasioned in a patient by a disturbance of structural balance in any part, the obvious indication of cure is to remove the cause of the disturbance. If any body by pressing upon the eyeball deprives it of its sphericity, remove the body that does so. If a patient leans against his sternum in writing till he begets suffering thereabout, take care he ceases to do so. Each case requires its special precaution so clearly that it were idle to iterate the fact. But I hardly think it unprofitable to invite attention to a very homely topic before I take leave of this essay.

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* Medical Times and Gazette, March 17th, 1860.

It has been shown how important it is that the structural balance of the trunk should be ordinarily preserved. When we walk, this equilibrium is stable, and when we lie it is approximately just. But we spend a great portion of our time in the sitting posture, and what provisions have we that the balance shall be easily kept in this attitude? In plain English, on what principles are the backs and other upright supports of our chairs and sofas constructed? Our easy chairs and couches, not to say chairs for general use, show no conformity in the principles upon which those uprights are conceived. All looks as if there were no knowledge of comfort in such things. The majority seem made with a view to torture rather than ease. I cannot therefore deem it a thankless task to endeavor to ascertain what are the requisites of such structures. At least, I will give a device for what I have concluded to be the best form of chair as an example. I will do so in dimensions to fit the use of a man of middling size. The chair shall be of wood, for if it be easy in bare wood it cannot fail to be so when cushioned.

Let the seat be 18 inches from the floor and of the shape of a semicircle of a diameter of 21 inches, whose straight edge is the front of the seat, and let it, in a style which is common, be scooped toward the back to fit the nates. Again, in the usual style of elbow chairs, let there be a horizontal semicircular bar for the elbows to rest upon, 11 inches above the seat and of its diameter, and let this elbow-bar be supported on either hand laterally by four or five upright bars with equal intervals.

In the middle of the back let the support for the elbow-arch be a flat plank of 5½ inches' breadth, or rather, let two short elbow-bars be let into such a plank rising from the middle of the posterior border of the seat, to the height of 22 inches, and let this plank be curved to the lateral contour of the loins, as may be seen in the cushions of railway carriages. Or, in definite measurements, let the plank, at vertical heights of 2, 5, 10, 15, 22 inches, be gradually inclined backward to the horizontal extent of ¼, ¾, 2½, 3¼, 4 inches respectively. Beginning at the top of the plank, let a longitudinal groove be cut a foot down the anterior face of the plank, of 1 inch wide and ¾ inch deep; let its edges be beveled away, as also other sharp edges of the plank. Below the elbow-arch the plank may be hollowed in the horizontal direction to coincide in curvature with the seat.

Graceful appearance apart, we have here the elements of a comfortable chair. The lower portion of the back will form a cradle for the pelvis, and prevent its weight from effecting pressure upon higher parts of the trunk; the curved portion rising therefrom will bear up the loins and lower part of the chest. The backpiece will allow the middle channel of the back to rest against it at any and every point, while its longitudinal groove will afford on escape from pressure for the thinly-covered vertebral spines, leaving this to be encountered by the bed of muscle at their sides. When any pressure that might be extended to the ribs would not affect the form of the chest, owing to the short leverage at the vertebral articulations of the ribs along the channels at the sides of the spine. The shoulders play backward and forward without impediment; and since the trunk preserves its natural form as in a standing position, the respiratory muscles meet with no hinderment in their office. The arms, resting upon the elbow-bars, do not cast their weight on the shoulders, while these are steadied.

But the combination of contrivances fulfills more recondite conditions. Not only do the ribs and abdominal surface ebb and flow as we breathe, but the curvature of the spine oscillates in degree. In this oscillation the backpiece allows the vertebral column to *roll*, as it were, along it—it is a sort of involute for the chain of vertebræ, as the evolute, to wind and unwind upon. For these reasons I have placed persons suffering from pains about the sternum, which have been acquired by pressure habitually thrown upon the shoulders, to sit against a narrow pillar or vertical plank, as may be met with in paneling, and the ready expedient has answered my expectations.

People do not sit long in one posture, and this chair allows a considerable degree of shuffling about without the sacrifice of its presumed advantages. If to change the point of chief pressure the nates be slid forward, the backpiece will still take spine, and chiefly at another spot, so as to relieve the points of pressure along the back also; and the semicircular shape of the back-cradle will give the sitter a fitting support for his back, however he leans about.

Though it has been laid down as a rule that the shoulders should not rest against any framework, it would not be amiss if there were such a framework forming a portion of a larger circle than the framework described, and crossing the upright bar at the top posteriorly, so that this bar be let into the upmost crosspiece in front, and that it project for an inch beyond it. Thus this extra framework, which may be partially formed by prolongations of the hinder upright bars that support the elbow-arch, would form recesses where the shoulders may be brought to bear a little to steady them laterally, and that they may take a little of the pressure of the trunk at our pleasure.

I have given the above description in stiff lines for the sake of being explicit and intelligible, but there is no reason why elegance should not be realized in the design. The elbows may be curved along their upper margin, the bars replaced by ornamental carving or wicker-work, the backpiece extended in a curved fashion below, or perforated for ornament, and may be undulating upward, spreading over the top of the shoulders on either hand. Cushioned chairs may be so stuffed as to afford a backpiece as here indicated, as well as the transverse projection for the loins as they now commonly have; and if carried as high as the head, bear a cushion projecting well *forward*, to take it, without the neck being unnaturally thrown back. I have thus devoted some attention to the analysis of the conditions essential to comfort in an article in daily use by every healthy person who is not destitute or a bed-lier; and whatever be thought of these reflections, it will not be gainsaid that they treat of questions of concern to the healthy, and of vast interest to a host of invalids.—(*British and Foreign Medico-Chirurgical Review*, April, 1861.)

Editors' Table.

Cervantes, an Honorary M.D.—"Don Quixote" is not the home-book of the Spanish people only; it has been translated into all the languages of the civilized nations of the world, and is read with avidity and delight in all of them. Of those who take it up for the first time, few know, or, if knowing, care about the intention of Cervantes in writing the adventures of the renowned knight of La Mancha and of his squire Sancho Panza. All its readers enjoy the comic, ridiculous, and extravagant incidents in the career of the two worthies; some feel the humor in addition to the fun, and a more select number appreciate the wit and the satire which run through the whole work. The design of the author was not to make knight-errantry ridiculous, but to cover with ridicule the prevailing literature of the time, in Spain, which was made up, to a great extent, of trashy romances of chivalry, in which were accumulated the grossest blunders in history, in geography, and in philosophy, with the addition of the most dangerous errors in morals. Under such influences, the national spirit became misdirected and its taste perverted. The Spaniards began to esteem nothing but bombast and inflation, both in conversation and in writing. Wise and patriotic, then, was the design of Cervantes, in overthrowing the whole fabric of chivalric literature. He did not make the attempt by the aid of arguments, grave dissertations, sermons, and legislative prohibitions—his weapons were satire and ridicule, and with these he was eminently and entirely successful. The romances of chivalry ended with "Don Quixote."

That we may not give our readers time to ask, what bearing have these remarks on the question of Cervantes being received into the ranks of the medical profession, and of his "Don Quixote" finding a place in the medical history of Spain? we shall go to the pith of our subject without further delay. Everybody knows that Cervantes has written the history of a madman, but it was reserved for the inquiring spirit of a countryman, Dr. Antonio Hernandez Morejon, to point out the kind of madness with which Don Quixote was affected, and to show how accurately its distinctive features have been delineated. This writer, at the conclusion of his Bibliographical History of Spanish Medicine,* claims for Cervantes a more accurate power of description of insanity than was displayed even by Aretæus.† In following the line of argument pursued by M. Morejon in support of his opinion, we shall avail ourselves of a French translation by Dr. J. M. Guardia, who has made some additions in the way of introduction and commentary.

The Spanish physician refers to the well-known fact, that every hospital and asylum holds within its walls a maniac who believes himself to be some great personage—king, pope, general, a rich and powerful man, or a saint, and even the Deity himself. But, he adds, we nowhere find, in the annals of insanity, a madman so extraordinary, so benevolent, so amorous, so intent on advancing the public good as the wandering knight, who was desirous of driving out of the world all rogues, scoundrels, and wicked persons, and of redressing all the wrongs and iniquities which they had committed, as well as of pouring a healing balm on the pains, sufferings, and labors of the unfortunate; in a word, the hero who was to disenchant the peerless Dulcinea del Toboso. Let us now analyze the insanity of Don Quixote under its various aspects.

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* *Historia Bibliografica de la Medicina Espanola.*

† Bellezas de Medicina Practica descubiertas en la Obra de Cervantes, pp. 166–180.

"Cervantes proposed to himself to describe a peculiar species of insanity. He begins by studying the manner of life and habits of the person, and the nature and character of the affection which he is about to draw, giving in their entireness all the predisposing and occasional causes which would be most likely to contribute to its development. He indicates its seat, and passes in review its periods, without losing sight of its changes and termination; he reasons on the prognosis, adopts the most suitable means of treatment, in such strict conformity with the rules of art that he may serve as an example to all philosophical physicians."

Bringing under notice the predispositions and causes of insanity, we meet with—1. "A bilious, melancholic temperament—Don Quixote was of lofty stature, with a complexion indicating robustness; his face was thin, body lean and hairy. 2. Adult or mature age—Don Quixote was bordering on fifty years. 3. An acute and cultivated intellect—Don Quixote had intelligence, an excellent memory, and large attainments; he had all the knowledge claimed for a knight-errant; theology, jurisprudence, medicine, botany, astronomy, mathematics, history, etc.—a most learned madman, beyond dispute, when his maniacal turn came. 4. The pride of ancestry and nobility—Don Quixote was a gentleman (*hidalgo*) of La Mancha, descended in a direct male line from Gutierra Quijada, the conqueror of the sons of the Count St. Pol. 5. Violent exercises—Don Quixote was a great hunter of hares. 6. The transition from an active to an idle life—Don Quixote neglected almost entirely the exercise of hunting, and even the superintendence of his estate. 7. Highly seasoned and nutritive food and that difficult of digestion — Don Quixote ate most commonly at his supper meat-hash, lentils on Friday, flesh meat on Saturdays, and young pigeons on Sundays. 8. Summer and autumn—Don Quixote suffered from his worst paroxysms of insanity on the 28th of July, the 17th of August, and the 3d of October. 9. Amorous passions—Don Quixote was deeply in love. 10. Excessive reading — Don Quixote sold many acres of his arable land in order to buy works on chivalry and erotic poems. 11. Prolonged wakefulness—Don Quixote 'read without ceasing day and night, to such a degree that by reading and sleeplessness, other causes contributing, his brain became dried up, so that he lost his judgment.' We find designated in this last sentence, with all the precision and clearness that could have been displayed by Hippocrates and Boerhaave, the diseased organ, the seat and immediate cause of the malady."

Symptomatology.—When once Don Quixote had become deranged, he imagined that all that he had read in books of chivalry and erotic poems were realities. His imagination ran on quarrels, battles, challenges, wounds, declarations and offers of love, and other extravagancies. Under the firm belief that all the absurdities met with in his reading were historical realities, he conceived the idea of becoming a knight-errant and to roam the earth in search of adventures. Dr. Morejon calls the madness of Don Quixote, monomania—his translator, Dr. Guardia, says no—it was many-sided mania. To our mind it seems that the dominant and persistent conviction of the Don, throughout, that he was a true knight-errant, who had vowed to redress the wrongs and succor the oppressed, was certainly that of a monomaniac; of one who suffered at the same time from hallucinations and illusions, in taking inns for castles and windmills for supernatural agencies, and ordinary persons on the road for oppressors, magicians, and other objects of a diseased imagination. The mind of Don Quixote was not the victim of complete mania. Apart from his dominant delusions of his vocation as knight-errant, when he was indeed haughty, arrogant, combative, daring, and rash, he showed himself on other occasions to be not only kind, courteous, and polite in his deportment, but, also, abounding in philosophical reflections and discriminating judgment. On all subjects he reasons admirably; he utters eloquent dissertations, and is fitter, as Sancho says, "rather to be a preacher than a knight-errant." The fine traits of mind and character, and even the extravagancies and insane delusions of Don Quixote, are brought out in stronger relief by contrast with the sensuality, gluttony, idleness, cowardice, and cunning, and at the same time a dash of shrewdness and homely wit of Sancho.

"*The Duration and Periods of the Disease.*—All diseases, without exception, whether they be long or short, have their periods or stages. Cervantes was careful not to make his patient an exception to this law laid down by Galen; the beginning, the increment, the height, and the decline of the insanity are indicated formally in his work, by so many escapades of Don Quixote.

"It began in the summer and declared itself in this fashion; the knight spoke to himself in his room on things relative to chivalry, and analogous to the occasional causes of his disease. Sword in hand, he made lunges at the walls, as if attempting to overcome giants, felons, and outlaws, and to obtain a triumph over them, and to redress wrongs, and procure satisfaction for misdeeds and injuries.

"Next he set about preparing all kinds of arms, and conceived the project of roaming over the land, in the exercise of the profession of knight-errant—a project which he carried out by his escapade of the twenty-eighth of July, one of the hottest days of the season, and on the night of which he exhibited the first paroxysms of the furor and recklessness of his insanity, followed soon afterward by the meeting with the half naked boy tied to the trunk of a tree, and with the merchants of Toledo.

"The increment of the disease is manifested from the date of the second sortie of the debonair cavalier from home, up to the time of his return. During this interval occurred the adventure of the windmills, the combat between the hero of La Mancha and the Biscayan, the melée with the bloody-minded Yanguesses, the adventures in which an inn is mistaken for a castle, and those of the funereal convoy, the fulling mill. Mambrino's helmet, the deliverance of the galley slaves, the penance in the wilds of the Sierra Morena, the assault on the bags of red wine, and the dealings with the archers of the Holy Brotherhood, and the white penitents. In the recital of this period of the increment of the disease, Cervantes secures beyond dispute the admiration of every philosophical physician. In this part of his work, he has, to my mind, says Dr. Morejon, drawn that species or variety rather of mania, of which Aretæus, at the end of a chapter devoted to the subject, has said: 'There exists another kind of delirium in which the afflicted lacerate their bodies, in the pious belief that the gods so will it and look with favor on such acts.' The picture which the Spanish author has drawn of the mania of Don Quixote, Knight of the Sorrowful Countenance, surpasses the original of the physician of Cappadocia."

In this picture Cervantes has united all the traits which indicate the greatest intensity of this disease, viz., incredible endurance of continued vigils, prolonged and alarming abstinence from food, insensibility to the action of cold, profound sighs, tears, fervent prayers, decided desire to tear and divest himself of his clothing, retaining nothing but his shirt; to make whirls and summersets; an enormous display of muscular and nervous tension of the nerves and muscles, and mortifying the flesh in honor of the goddess of his love, the peerless Dulcinea.

"In his retreat in the Sierra Morena, we are struck with a circumstance worthy of special notice; it is the meeting with Cardenio. For the most part, the insane prefer isolation: shunning each other's company, and despising and ridiculing one another: the only sympathy manifested among them is when their delirium is of the same nature. It is precisely this fact which Cervantes has noted with a master hand, in the episode of this gallant young fellow, who had become insane under the belief that Fernando had carried off his idol, Lucinda. On this occasion we have an example of those lucid intervals which are constantly exhibited by the insane. Cardenio's recital of his misfortunes to the curate, in one of these intervals, deserves to be read as illustrative of this truth. Another trait which merits the notice of medical men is the practice of maniacs to change their names. During the period in question, Don Quixote took the title of the Knight of the Sorrowful Countenance, and, at a later period, that of Knight of the Lions.

"The shades of alternations of the moral character in monomania are, pride, disdain, an exaggerated feeling of personal importance, and confidence in his own prowess. Don Quixote was continually boasting of the strength of his untiring arm; and on one occasion he went so far as to tell his squire that heaven had not created nor hell ever seen any one capable of inspiring him with fear.

"The last sortie of our hero, ending with his defeat by the Knight of the White Moon, after which he returned home for the third time, includes the periods of the height and the decline of his insanity. The marked symptoms were exhibited in the adventures with the wain of the Parliament of Death; the Knight of the Mirrors; the lions; in the cavern of Montesinos; the famous adventure of the enchanted boat; that of the afflicted duenna; the unequal combat with Tosilos; the battle with the bulls; the adventure of the beautiful Moor; that of the swine; of the enchanted head; and finally that of the Knight of the White Moon, at which begins the transition of one disease to another, a transition called by the Greeks *metaptosis*, and which is one of the most curious and difficult subjects in practical medicine.

"*Transformation of Insanity.*—Diseases sometimes extend from one organ to another, without any abatement of the primitive lesion; or they vary in their manifestation, although the organ primarily affected still exhibits the symptoms of the disease. Cervantes gives us an instance of this transformation of the malady. In Don Quixote's case an acute fever supervenes, and immediately all the physical and general features of the first affection are altered. These changes give rise to curious inquiry, in three ways: first, in relation to practical medicine; secondly, as applied to medical jurisprudence, for without this change Don Quixote could not have made his will, or if he had done so, it would have been null and void; and, finally, in relation to the effect of the change in the disease on its prognosis and termination.

"The sudden conversion of the insanity into a fixed depression, and a profound melancholy; the complication of a violent fever, and the sudden transition from madness to reason, were so many circumstances which ought to inspire fears for the life of the sick man; and it was precisely this series of phenomena which served as presages to the death of the celebrated knight."

Dr. Morejon claims for the Spaniards, his countrymen, the honor of the first recourse to the humane and mild treatment of the insane, the initiation of which in France, and, generally, as it was thought in Europe at large, constitutes the chief title of Pinel to fame. The rational method adopted in the insane hospital at Saragossa, and praised by Pinel, was probably borrowed from that of Valencia. It was exhibited in practice, two centuries before the time of the French author, by Cervantes, in a formal manner, with equal genius and skill. One cannot but admire the medico-moral strategy which he brought to bear in order to calm the fury and ravings of his knight-errant; the means were not less original than that by which he banished from Spain the bad taste that induced everybody to read books of chivalry. Cervantes brought with him to his task a large and varied experience of the world, in which he had acted many parts, a keen insight into human nature, with whose infirmities and vagaries he had formed an intimate acquaintance. Cervantes had made himself entirely master of the character of Don Quixote, as of a living and acting man, one whom he came to look on as his son, and, as such, one who had become the object of his tenderest care in devising the means for the relief of his distressing malady.

> "Six persons figure in different characters in this history, as taking a part in the treatment, to meet the two extremes of the epigraph of Boerhaave: the curate, a well-informed man, master Nicholas, and Sanson Carrasco favor the absurdities of the knight; the canon of Toledo, the governess, and the niece oppose them with energy."

It was necessary to begin the treatment by a removal of its efficient cause, and hence an examination and burning of all the books on chivalry and love, which had been shut up in a separate apartment closed by a wall, and then the persuading the patient that the destruction was the work of enchantment. This was the most sensible course which could be pursued under the circumstances of the case. The learned magician Mugnaton, mounted on a serpent, comes in a cloud; he escapes by the roof, and leaves the house filled with smoke. The cure was, however, retarded, partly on account of the plan of the romance in the mind of the author, who could not allow the story to end thus languidly, and in part, as Dr. Morejon points out, owing to a slight inadvertence of the niece, who confounded the name of Freston or Friston with that of Mugnaton,—an instance intended to show the necessity of great sagacity and prudence in such cases, as the least negligence will upset the best-devised plans.

By the devices of the curate and the village barber, who enlisted the fair Dorothea on their side, the crazy knight is persuaded to leave his solitude in the Sierra, and is brought to a tavern, where he falls into a profound sleep blended with a kind of somnambulism, which was a prelude to a remission of the disease. In this state he is carried, without much resistance on his part, to his home. The resolve of the curate and barber to let an entire month pass without seeing the sick man, for fear of awakening the memory of past occurrences, now that he began to exhibit proofs of returning reason, was excellently conceived: it would have been still better if all the members of his family had stayed away. The dietetic regimen prescribed and followed in the cure was most appropriate. When the disease was on the point of reappearing, the threats of his housekeeper, that she would complain loudly both to God and the king, if he did not remain quietly at home; those of his niece, when she pointed out to him that all his narratives of knight-errants were fabulous and false, and were only fit to be burned, and at the very least merited the censure of the Inquisition,—these threats and complaints were among the best adapted, and in Spain the most powerful, to arrest the insane outbreak. As such they were turned to account by the canon of Toledo.

The third device of a curative nature was the agreement between the curate and the barber, in conjunction with the bachelor Sanson Carrasco, who disguises himself as the Knight of the

Mirrors and engaged in single combat with Don Quixote. The same plan was followed out to the approaching termination of the disease, during the time when he had become a shepherd. This moral treatment of the insanity of Don Quixote was attended with an abatement of the disease, which is as exactly and truly described by Cervantes, as if he had borrowed the pen of Aretæus himself.

Not only did Cervantes precede Pinel in the moral treatment of insanity, but also, adds Dr. Morejon, Broussais himself in the doctrine which gained the latter so many proselytes in Europe; for the Spanish author, in laying down the axiom, through the saying of the crazy man of Seville, that "the stomach is the laboratory in which health is fabricated," shows thereby the connection between this organ and alterations in the judgment. The reveries of Hahnemann were also anticipated by Cervantes in a practical and common sense manner: first, in the conception of his great work "Don Quixote," to cure epidemic insanity, arising from knight-errant literature, by the fictitious history of an insane man; and, secondly, to relieve his patient by appeals to his senses and imagination, similar to those by the long reading and study of which he had first become distraught.

Determined to carry out the clinical study of Don Quixote to the end, Dr. Morejon sees only one omission in the great work of Cervantes to interfere with its completeness: this was the failure to make a *post mortem* examination of the famed knight of La Mancha. But he finds plausible reasons for this omission, some of which are purely speculative, if not imaginary. The true one was, doubtless, the impossibility of an examination being made, owing to the prejudices of the family and near relations of the deceased, especially in a village,—prejudices, we may add, common enough both in village, town, and city, even in this our present age of boasted enlightenment.

In conclusion, we cannot withhold from Dr. Morejon the credit of having added a new leaf to the laurel crown long awarded to the author of the inimitable "Don Quixote." He has accumulated proof upon proof of the medical instinct, as we might term it, certainly of the powers of medical observation, of Cervantes. We must not suppose, however, that this great genius was indebted to his imagination alone for the admirable picture of insanity which he has drawn. Scholar, soldier,—fighting and losing a hand at the battle of Lepanto,—traveler, long time a prisoner among the Moors in Algiers, and whose life was marked by many adventures abroad and of vicissitudes at home, he could not have passed by with indifference either the individual case of insanity met in chance rencontre, or the collection of many persons in insane asylums, in the different places which he visited, and especially those of his own country.

"Don Quixote" was not the only portrait of a deranged man drawn by Cervantes. In one of his many moral novels, as he called them, he introduces to his readers a poor devil of a licentiate, Vidriera by name, who had spent his youth in study amid books, at the schools, long resisting the seductions of love, until he was poisoned by a philter, which threw him into a lingering malady, accompanied by mania. The monomania in this case consisted in the belief of the licentiate that his body was made of glass; and hence an account of the most minute and comic precautions for preserving this frail structure from the rude contact of external objects.

The reading of "Don Quixote" in a medical sense, while it increases our admiration for the genius and descriptive powers of the author, can hardly fail, at the same time, to temper the exuberance of spirits which would otherwise be induced by a perusal of the narrative of the ludicrous situations in which the knight and his squire are thrown, and of the comic incidents of which these personages are the occasion. Even before the enlargement of the field of our mental vision by this new light thrown on the subject, most readers, of ordinary reflection, must find themselves in a state of feeling of a secret interest in the successful issue of the adventures of the madman, while laughing at his extravagancies; nor can they separate, in their minds, the amusement derived from the absurdities displayed during the paroxysms of his insanity from the respect and deference which they feel for the good knight in his lucid intervals. The raving mania is, on these occasions, replaced by pleasing evidences of good education and gentlemanly refinement, increased powers of memory, witty sallies, and *bon mots.* It is thus that the Don shows himself in the palace of the duke, and at the house of Don Antonio Moreno, at Barcelona. So, also, in his narratives and conversation, in his catches, and in the episodes which embellish the work, we meet with lessons and precepts for all classes of society.

THE IMPENDING WAR.—America is upon the verge of a mighty revolution. The fiat of war has gone forth; the fife and the drum are heard in our midst; armed men are rushing to and fro; nearly fifty thousand soldiers are guarding the capital of the Union; a large opposing military force is marching from the South; and it requires no special sagacity to perceive that a terrible conflict is about to be inaugurated—a conflict destined, in all likelihood, to be more sanguinary than any since the days of the first Napoleon. Our country is placed under new and startling relations. For nearly half a century it has enjoyed uninterrupted peace, and an amount of prosperity unequaled by that of any other nation of the globe. The art of war had literally slumbered with the heroes of the Revolution. The sword and the musket had been exchanged for the plowshare and the pruning-knife. Agriculture, the mechanic arts, and the sciences possessed unrivaled sway. We had, it is true, during this period, some hard Indian fights, and we were compelled, or thought ourselves compelled, to send an army into Mexico, in order to put an end to her hostile incursions upon our Southern frontiers. But these were mere collateral issues, scarcely in any degree affecting the national weal. Now, however, the American people are about to be plunged into civil war; a war which God alone, in his wisdom and mercy, can avert, and of which, if it be once fully inaugurated, it is impossible to foresee the end, however easy it may be to perceive the dreadful consequences both to ourselves and to civil liberty throughout the world.

Amid these scenes of strife and distraction, science shrinks from her accustomed walks, and seeks the retirement of the closet and the cloister. Her pupils are scattered far and wide; the halls of the academy are forsaken; and the press, her willing instrument in times of peace, no longer requires her aid. Her voice is silent, and her disciples go mourning about the street. The interests of our own profession are deeply involved in the sad consequences of the impending war. Already a number of journals have been suspended, either on account of the disturbed state of the postal arrangements, or because the editors have laid down the pen for the sword; and it is easy to foresee that our medical schools, both North and South, will have diminished classes during the next session. A great demand has, it is true, been created for military and naval surgeons, but by far the greater proportion of our students will enter the service of the country in the capacity of privates, preferring to fight in the ranks to waiting for the tardy acquisition of the medical diploma.

The approaching contest will undoubtedly afford, what it is too sad to contemplate, ample opportunities to our surgeons for the exercise of their skill, humanity, and bravery. War is well calculated to develop the noblest traits of their character. Their duties are immense; for not only are they to take care that the men who are committed to their charge do not become sick from the use of improper food, bad clothing, and unnecessary exposure and fatigue, but should any fighting occur they must be prepared, with all the readiness and alacrity of experts, to do justice to the wounded, affording them all the aid and comfort of the art and science of their sacred calling. The qualifications of men destined for the army and naval service of the country cannot be too closely scrutinized; none should be admitted who are not thoroughly competent for every emergency, however sudden, unexpected, or trying. Disease, if not the sword, will, in any event, during the present crisis, slay its thousands; and let the authorities see that the medical men whom they send to take care of our troops do not add, by their want of knowledge and courage, to the horrors of the mortality.

America has never produced one great military surgeon, or one who has made, from the storehouse of his own experience, any important contributions to our stock of knowledge. One reason of this, no doubt, is that we have not been engaged in any great battles such as those which have so often desolated the nations of Europe. Under more favorable circumstances for distinction, there is no reason to believe that our surgeons, army as well as naval, would not, like those of the Old World, have covered themselves with glory. The British army has been fruitful in great surgeons. The names of Woodall, Wiseman, Brown, Hunter, Hennen, Thomson, S. Cooper, Guthrie, McGrigor, Ballingall, Hutchinson, Alcock, Burnett, and Macleod, not to mention many others, have shed imperishable lustre upon British medicine.

FEMALE NURSES.—Thousands of noble-hearted and patriotic women, both North and South, have offered their services, as nurses, during the approaching war. In a number of cities temporary schools have been established for the delivery of practical instruction in this particular art.

SOLDIER'S FRIEND.—Under this title Dr. Ziegler, of this city, has written a small tract, of a seasonable character, published by S. S. White, for gratuitous distribution among soldiers. The hints he has thrown out are of a highly practical character, comprehensive and easily understood. They are well adapted for the purposes designed, and will no doubt prove very useful to those who are in the field. The tract is worthy of extended circulation.

MADRAS QUARTERLY JOURNAL OF MEDICAL SCIENCE.—We have received the first three numbers of this able periodical, and shall be happy to place it upon our exchange list. Mr. Bohn is the agent for it at London.

UNIVERSITY OF MICHIGAN.—Dr. S. G. Armor has accepted the Professorship of the Institutes of Medicine and Materia Medica in the University of Michigan, an institution which is now attracting large classes, that of last winter having numbered 242.

There are some features in regard to the plan of instruction in this school which might be profitably imitated by other similar institutions. Thus, it has a session of six months, and four lectures only are delivered a day; an arrangement which affords the student ample time for dissections, careful reading, and chemical manipulations. The professors are paid by the State, and no pupil is permitted to leave before the close of the session, his tickets being withheld up to that period.

BELLEVUE HOSPITAL MEDICAL COLLEGE.—Under this title a new school has recently been organized at New York. The faculty, as the accompanying card shows, consists of thirteen members, with a number of attaches, and the lectures are to be delivered at the hospital whose name the college bears.

JAMES R. WOOD, M D., Professor of Operative Surgery and Surgical Pathology.

FRANK H. HAMILTON, M.D., Professor of Military Surgery, Fractures, and Dislocations.

LEWIS A. SAYRE, M.D., Professor of Orthopedic Surgery.

ALEXANDER B. MOTT, M.D., Professor of Surgical Anatomy.

STEPHEN SMITH, M.D., Professor of the Principles of Surgery.

ISAAC E. TAYLOR, M.D., GEORGE T. ELLIOT, M.D., B. FORDYCE BARKER, M.D., Professors of Obstetrics and the Diseases of Women and Children.

BENJAMIN W. MCCREADY, M.D., Professor of Materia Medica and Therapeutics.

JOHN W. S. GOULEY, M.D., Professor of Descriptive and Microscopic Anatomy.

AUSTIN FLINT, M.D., Professor of the Principles and Practice of Medicine.

R. OGDEN DOREMUS, M.D., Professor of Chemistry and Toxicology.

AUSTIN FLINT, JR., M.D., Professor of Physiology

CHARLES D. PHELPS, M.D., Demonstrator of Anatomy.

N. R. MOSELY, M.D., Prosector to the Chair of Surgical Anatomy.

SYLVESTER TEATS, M.D., Prosector to the Chair of Operative Surgery and Surgical Pathology.

SURGEON-GENERAL OF THE UNITED STATES.—Dr. Finley, of Pennsylvania, succeeds Dr. Lawson, recently deceased, to this important office.

Dr. Gibbs, of South Carolina, is Surgeon-in-chief of the Confederate Army.

Dr. Eve, of Nashville, holds the office of Surgeon-general to the Volunteer forces of Tennessee.

PENNSYLVANIA MILITARY SURGEONS.—Professor Henry H. Smith, of this city, has been appointed by Governor Curtin Surgeon-General of Pennsylvania.

A few weeks ago, a Medical Board, consisting of Dr. Smith and Dr. Agnew, of Philadelphia, Dr. Dock, of Harrisburg, and Dr. King, of Pittsburg, met at the capital of the State for the purpose of examining applicants for admission into the Medical Staff of the Volunteer Service. It is said that 60 candidates were present, and that 230 permits had been issued.

A large number of young physicians of Pennsylvania have entered the Volunteer Service of the Army as surgeons and assistant surgeons. It is also understood that quite a number are applicants for admission into the Regular Army and Navy.

DR. TRIPLER.—This gentleman, recently stationed in this city, and so well known as one of the ablest surgeons in the United States Army, is now a member of General Patterson's staff *en route* to Harper's Ferry. Dr. Tripler saw much military practice in Mexico, and has recently published, in conjunction with Dr. Blackman, of Cincinnati, a small work on Military Surgery.

MOTLEY, THE HISTORIAN, NOT A SURGEON.—In "The Rise of the Dutch Republic," by this gentleman, is an account of the attempted assassination of the Prince of Orange, whose escape is thus fancifully explained by the author:—

"On the 18th of March, 1582, the prince narrowly escaped with his life from the pistol of an assassin. While passing from the dining-room of the palace at Antwerp, he was met at the ante-chamber of his own apartments by a young man, who offered him a petition. The prince took the paper, and as he received it, the stranger suddenly drew a pistol, and discharged it at his head. The ball entered the neck under the right ear, and, passing through the roof of the mouth, came out under the left jaw. His hair and beard were set on fire by the discharge. He was believed to be mortally wounded by all who stood by. After recovering from the shock, his first words were, 'Do not kill him, I forgive him my death.' But his message of mercy was too late. Two of the gentlemen present had run the assassin through with their rapiers. The halberdiers rushed upon him in a moment, and he fell covered with mortal wounds. The prince was supported to his chamber by his friends, and, upon a surgical examination, the wound was found less dangerous than had been supposed. This was owing to a singular circumstance. The flame from the pistol had been so close that it had cauterized the wound inflicted by the ball. The flow of blood, which would otherwise have proved fatal, was thus prevented. The papers found upon the person of the assassin were all in the Spanish language, showing the Spanish origin of the plot, if any plot had existed. The pistol with which he had done the deed was lying upon the floor—a naked poniard was concealed in his clothes—in his pocket were various Catholic emblems and charms, a Jesuit catechism, a prayer book, Spanish bills of exchange to a considerable amount, and a set of writing tablets. These last were covered with inscriptions, relating to his murderous project, and showing the depth of superstition in which his mind was sunk. It was discovered that the assassin was in the employ of a Spanish merchant of Antwerp, who had been bribed by Philip to procure the death of the prince. Before the exposure of the plot, the merchant had made his escape, but two of his confederates were arrested, and, after a full confession, perished on the scaffold."

If Mr. Motley were acquainted with the nature of gunshot injuries, he would know that they seldom bleed profusely unless attended with the lesion of important vessels, that bullets often pursue a most extraordinary route without inflicting serious mischief, and that the explosion of gunpowder, although it may severely burn a wound, is not an efficient hæmostatic. The Prince of Orange evidently owed his life to the comparatively harmless route of the assassin's ball rather than to the cauterization of his wound.

A CURIOUS TITLE.—A medical book is occasionally issued with a very curious title. One has recently appeared in London, with the following: "The Stomach and its Ailments Practically Arranged; to which *is* added, The Intestinal Canal and its Obstructions." It would be interesting to see an author arranging the stomach practically, and then to add to it deliberately the intestinal tube and its obstructions! This, however, seems to have been successfully done by Dr. Oke, Senior Physician to the South Hants Infirmary, London. We congratulate the gentleman upon his feat. Nothing of the kind, we believe, has yet been achieved on this side of the Atlantic.

THE NEW SYDENHAM SOCIETY OF LONDON.—The Honorary Local Secretary for Philadelphia, Dr. Richard J. Dunglison, 121 South Tenth Street, has just received the volumes for members for 1860, including "Clinical Memoirs on Abdominal Tumors and Intumescence," by the late Richard Bright, M.D., F.R.S.; "A Clinical Treatise on Diseases of the Liver," vol. i., by P. T. Frerichs, M.D., Professor of Clinical Medicine in the University of Berlin; and "A Year-Book of Medicine, Surgery, and their Allied Sciences," for 1859; together with a specimen plate of the beautiful Atlas of Skin Diseases, copied from the splendid work of Hebra, published by this society; which may be seen at his office. Each member for 1860 receives the three handsome volumes first named, and the first fasciculus of the Atlas, including three life-size plates.

The annual subscription is five dollars and a quarter, payable in advance. The books are received and distributed by the secretary, immediately upon their arrival from England. The volumes for 1859 may still be obtained. The number of members has already reached several thousand. The advantages offered to each individual member by a publishing society such as this increase *pari passu* with its number of members, *i.e.* each subscriber will receive more books if the society maintains its present great success or advances beyond it, than he would under less favorable circumstances.

Considering the character and number of the works already brought out, the society certainly commends itself to the very extended support of the profession.

COLLEGE PRIZES IN LONDON.—The following prize subjects are now offered by the Council of the Royal College of Surgeons of England for competition among the fellows and members of that institution. The subject of the collegial triennial anatomical prize of fifty guineas is "The Anatomy and Physiology of the Supra-Renal Bodies." There are two Jacksonian prizes of twenty guineas for the present year, namely, "The Structure and Diseases of the Lachrymal Passages at the Inner Side of the Orbit, being those between the Conjunctiva and the Nasal Cavity;" the other is "On the Best Method of Effecting the Radical Cure of Inguinal Hernia, explaining the Principle of the Operation adopted." There are also two subjects for the Jacksonian prize for the ensuing year, 1862, namely, "The Relative Value of the Treatment of Popliteal Aneurism by Ligature and by Compression;" and the other, "On the Healthy and Morbid Anatomy of the Tonsils, and the appropriate Treatment of their Diseases." The last Jacksonian prize was delivered at a meeting of the Council on Thursday afternoon, to Mr. Henry Thompson, F.R.C.S., of Wimpole Street.—*London Lancet.*

PRIZE QUESTION IN GERMANY.—The German Society of Psychiatrie and Juridical Psychology offers a prize of one hundred thalers for the best essay on the following subject: "What is the Classification of Mental Disturbances which is likely to prove most Serviceable in regard to Practical Medicine?" Essays to be sent to Dr. Erlenmeyer, secretary to the society, at Bendorf, near Coblenz, in the course of the present year.

ROYAL SOCIETY OF LONDON.—Dr. Brown-Séquard recently delivered the Croonian lecture. The subject was: "On the Relations between Muscular Irritability, Cadaveric Rigidity, and Putrefaction."

ORIGIN OF THE MENAGERIE AT THE JARDIN DES PLANTES.—Geoffroy St. Hilaire, at first a most laborious student at the Jardin des Plantes under the celebrated Fourcroy and Daubenton, exerted himself most heroically during the frightful massacres of September in rescuing the priests who had been his preceptors. Overcome with emotion, he then retired for awhile into the country, but, at the urgent solicitation of Hauy and Daubenton, he returned to Paris, and became one of the officials at the Jardin des Plantes. It was during the Reign of Terror, when the timid were only too glad to be replaced by more resolute friends; and first Daubenton, and then Lacepède, gave up the post of Demonstrator of the Cabinet of Natural History in favor of the courageous young Geoffroy. It was, indeed, to his bold and ingenious intervention and courageous fictions, which might have cost him his life, that these two great men owed their lives. Indeed, the proscribed of all parties found him their friend, converting as he did his apartments at the Jardin into a kind of asylum. By a strange contrast, amid all this confusion and bloodshed, a man of patriarchal simplicity and goodness of heart, Bernardin de St. Pierre, author of "Paul and Virginia," was placed at the head of the Jardin, now called the Museum of Natural History, with its twelve professors. A chair of zoology was created, but, being a new post, none of the professors would take it, and it fell to Geoffroy's lot as being the youngest, he being then only twenty-two. He had never hitherto taught anything but mineralogy; but he undertook his new task of teaching the history of the mammalia and birds with none the less resolution. The young professor, however, had but the fragments of a collection as objects of instruction; and as to a menagerie, France at that period knew of none other than that of the Gardens of Versailles. The simplest thing would have been to have transferred this to the Jardin, but during the period which followed August tenth the menagerie experienced the lot of everything attached to royalty, and underwent a true massacre. Most of the birds and quadrupeds were eaten, a rhinoceros and some lions, of which this use could not be made, having however been spared. These, too, were about to be sacrificed, when they found an eloquent and pathetic defender in the new intendant of the Jardin. The harmonious poet of nature, Bernardin de St. Pierre, constituted himself, in fact, their advocate, and pleaded their cause at the bar of the National Convention, taking as the epigraph to his discourse *Miseris succurrere disco*. More fortunate than others with the sentimental murderers who constituted the tribunal, he gained his cause. The lives of his clients were saved, and they were transferred to the Jardin des Plantes. Geoffroy added to them some ambulant menageries which the Commune of Paris had caused to be seized in the "cause of morality," and thus was laid the foundation of this valuable collection. — *Dubois' Eloge of Geoffroy St. Hilaire.*

A PROFESSOR IN THE CHAIR.—"The nobility of science, as contrasted with the nobility of birth," says the *London Lancet* of May fourth, "was honorably and successfully recognized this week by our newly-adopted professional brethren, the dental surgeons. The first anniversary dinner of the Dental Hospital was presided over, not by a duke, nor an earl, nor a marquis—not by a cabinet minister nor a political celebrity. The chair was taken by Professor Owen; and in his person were aptly represented the highest claims which odontological science can put forth. The attendance was more numerous than has been seen at an hospital dinner for many a day. Not only was the dignity of science vindicated by the selection of the president for the first anniversary meeting, but the perfect fitness and adaptability of a man of the highest scientific attainments for this kind of social responsibility were very triumphantly demonstrated. The number of guests attracted far exceeded anticipations, and the amount of subscriptions overpassed them in a twofold measure. We hope that this incident may afford a precedent, and that at similar meetings distinguished members of the profession may be called to preside with like felicity and equal success."

SUMMER COURSES OF LECTURES IN PARIS.—The following are the courses of lectures announced for the summer session at the Paris Faculty of Medicine:—

Pharmacology, by Professor Regnault: on Mondays, Wednesdays, and Fridays, at 10¾.

Materia Medica and Therapeutics, Professor Grisolle: Mondays, Wednesdays, and Fridays, at 3.

Obstetrics and Diseases of Women and Children, Professors Moreau and Pajot: Mondays, Wednesdays, and Fridays, at 2.

Physiology, Professor Longet: Mondays, Wednesdays, and Fridays, at 12.

Medical Jurisprudence, Professors Adelon and Tardieu: Mondays, Wednesdays, and Fridays, at 4.

Hygiene, Professor Bouchardat: Tuesdays, Thursdays, and Saturdays, at 4.

Natural Medical History, Professor Moquin-Tandon: Tuesdays, Thursdays, and Saturdays, at 11.

Surgical Pathology, Professor Gosselin: Tuesdays, Thursdays, and Saturdays, at 12.

Medical Pathology, Professor Monneret: Tuesdays, Thursdays, and Saturdays, at 3.

Pathological Anatomy, Professors Cruveilhier and Barth: Tuesdays, Thursdays, and Saturdays, at 2.

The Clinical Lectures at the hospitals by the same professors as in the winter, every day at nine.

INCOME OF ST. BARTHOLOMEW'S HOSPITAL.—This noble charity has its roots deep in the earth, for of its total income not less than four-fifths arise from rentals, the produce of estates lying mostly far away. Deducting from the full amount of rentals the costs of repairs, abatements, etc., the total produce is £27,537 12*s.* 3*d.* The next great item is £4625 6*s.* 6*d.*, dividends on stock, indicating a large reserve in funded property. There is another large sum of £2255 2*s.* 9*d.*, made up of various receipts from tithes, sale of timber, land, and old materials, and the profits of the collegiate establishment, the last being under £90. So that of this income of near £36,000, the whole is the result of true foundation income, except about the one-hundred and seventy-fifth part. This fraction is unique in the history of London charities, and it appears under the head of "Benefactions, £184."

PROFESSOR LIEBIG.—This eminent chemist has been appointed foreign associate of the Academy of Sciences of Paris, in consequence of the vacancy left by the death of Tiedemann.

THE ECRASEUR IN LITHOTOMY.—We copy the following precious bit of news from one of our London exchanges, for the benefit of our brethren in this country. We should not be surprised if we were soon to hear that this horrible instrument had been used for amputating the head. With M. Chassaignac nothing seems to be impracticable. We are persuaded that he has genius enough, if he would only deign to apply it, to pass into his patients' bellies, to diagnosticate and treat their diseases by direct inspection and contact:—

"M. Chassaignac, the inventor of the écraseur, lately performed lithotomy upon a little boy, aged three years, and used the écraseur instead of the knife. A curved trocar and canula were introduced into the prostate, either through the anal orifice or the skin above the anus, (the description does not definitely say which;) and through the canula, on the withdrawal of the trocar, the chain of the écraseur was passed, led by a fine bougie and thread. By working the screw, the chain cut, without hemorrhage, through, first, the anterior portion of the sphincter ani; secondly, that portion of the prostate which surrounds the neck of the bladder; thirdly, the whole of the membranous portion of the urethra; fourthly, the soft parts of the perineum which cover this membranous portion up to the third of an inch above the anus. This accomplished, M. Chassaignac placed the nail of his left index-finger into the groove of the staff, (which had been introduced at the commencement of the operation,) and pushed a curette into the bladder, by the aid of which instrument the forceps were introduced. A calculus, about an inch in its longest diameter, was then extracted. The child had quite recovered at the end of *six weeks*. Much might be urged against the proceedings above described, notwithstanding the success which has attended the operation; but we leave to each of our readers to calculate the amount of mischief which the écraseur may do, and to set against it the hemorrhage which generally attends lithotomy."—*London Lancet.*

CHOLERA IN CALCUTTA.—From accounts recently received in Europe and this country, it appears that this disease is now raging in a frightful degree in Calcutta and its suburbs.

THE TURKISH BATH.—This bath is attracting much attention in England, and the probability is that it will meet with great favor in that country. It has lately been inaugurated, with due honors, in Australia. It will, no doubt, be soon introduced into the United States. From a brief article in the *London Medical Times and Gazette,* which we here extract, it appears that it has already been employed with signal benefit in at least one lunatic asylum, namely, that of the Cork District, in Ireland:—

"At the meeting of the Cork District Lunatic Asylum last week a very interesting report was read by Dr. Power, resident physician, on the working of the Turkish bath in the asylum. It was introduced on his recommendation, aided by the inspectors, Drs. Nugent and Hatibel, approved by the governors, and sanctioned by the Privy Council. The experiment has been eminently successful. Since the opening of the bath in January last 121 patients have been submitted to its action. Out of these 10 are discharged cured, while 52 are improved and improving. Sixty remain unchanged, being all cases of many years' standing. Dr. Power says: 'I cannot conclude this report without stating, as the result of my limited experience, that such a provision should constitute an appendage to every institution where many persons are congregated for a lengthened period within a confined space. It seems to me to possess a power of compensating in a degree for the absence of pure air and exercise; and it seems to me a Turkish bath should form a part of every union workhouse and government prison, and all similar establishments.'"

AMERICAN FEMALE DOCTORS.—"Some time ago the visitors of M. Piorry's clinique, in La Charité, were amazed to see among the crowd of students who always throng to the wards of this most estimable and original professor, two American ladies, thickly veiled, who had crossed the Atlantic for the express purpose of seeing and admiring the inventor of the plessimeter, and the science of plessimetry, as exercised by his own hands. M. Piorry, who is, above all, Frenchman and *galant-homme*, paid the greatest attention to the ladies, and showed them a beautiful case of splenomacrosy, a remarkable instance of bronchosyphiosis, an interesting patient affected with enterocarciny, and an extraordinary case of angitromemphaxia. The ladies seemed to be quite familiar with the professor's wonderful nomenclature, which it is the great object of his life to introduce into all systems of pathology of the civilized and uncivilized world."—*Medical Times and Gazette.*

ARMY SURGEONS IN THE FIELD.—From the following statement in the *London Lancet* of May twenty-fifth, it will be seen that the position of army surgeons, in actual service, is far from being so safe or pleasant a thing as many suppose:—

"From a recent statement we learn that, from the beginning of the Indian mutiny until the fall of Lucknow, the number of surgeons and assistant-surgeons killed and wounded in action was seventeen. There were killed at Lucknow alone, two; wounded severely, two: total, four. Killed at Jhansi, one; severely wounded, one: both in the same regiment. Of the Arrah party, after the other two officers were killed, Assistant-Surgeon Clarke, of the 35th Regiment, commanded until he was himself mortally wounded. It was Surgeon Hone, (Victoria Cross.) of the 90th Regiment, who commanded the party of doolies when cut off from the column at Lucknow; and it was Assistant-Surgeon Wilson, of the 7th Regiment, who saved the life of the Duke of Cambridge, at Inkermann. It is, then, fairly asked, why are not army surgeons equally rewarded with other officers, since they are equally exposed? Why should there be no brevet, which is at least harmless in its operation? There was one in the late Company's service at last, and we concur in the regret expressed that it is not still in force."

BLIND PERSONS IN IRELAND.—It is said that there are 4000 blind women and nearly as many blind men in Ireland. The Irish workhouses contain 1700 blind inmates. It is reported that many of these cases of loss of sight are directly chargeable to a want of personal cleanliness! Dr. Wilde, a high authority on diseases of the eye, declares that the Irish people are more afflicted with blindness than those of any other nation, except the Norwegian.

PYOCYANINE.—The blue or green color of the pus of certain abscesses has been ascribed by different chemists to sulphuret of iron, ferrocyanuret of iron, or some other cyanogen compound; and M. Bergouhnioux contends that it is owing to the coloring matter of the bile. M. Fordos has, however, discovered the nature of this peculiar principle, and has given it the name of pyocyanine. It may be obtained in the following manner: the linen or bandages stained with the tinted pus are to be thoroughly soaked in water containing a little of the solution of ammonia, and a light bluish-green liquid is the result. To this is added chloroform, which extracts from the solution the blue principle, as well as the yellowish foreign matter. The chloroform is then drawn off, filtered, and evaporated, and distilled water is added to the residue, taking up the coloring principle, and leaving the fatty material. Chloroform is again admixed, and the solution treated as before. The blue principle and the yellowish matter being thus obtained, a few drops of chlorohydric acid are added, which redden the former, and the chloroform then dissolves the yellow material, leaving untouched the blue, which is rubbed up with carbonate of baryta, in order to get rid of the acid, and is, on the evaporation of the chloroformic solution, deposited in beautiful blue prismatic crystals. These are soluble in water, alcohol, ether, and chloroform; and the solution is reddened by acids, the natural color being restored on the addition of an alkali.

NECROLOGICAL NOTICES.

DR. LAWSON, Surgeon-General of the United States Army, recently died at Old Point Comfort, at an advanced age, and after long-continued failing health. We have not seen any memoir of his life, or any of the particulars of his last illness.

DR. D. MEREDITH REESE died at New York on the thirteenth of May, of disease of the heart. At the time of his death he was Professor of Medicine in the Medical College of New York, and Editor of the *American Medical Gazette*, which he founded about ten years ago.

We extract, from an obituary notice in the *New York Medical Times*, the following particulars of Dr. Reese's life:—

"Dr. Reese was born in Maryland, about the year 1800. He graduated in medicine at the University of Maryland, March 26, 1819, his inaugural thesis being De Mania Religiosa, and settled in practice at Baltimore. He passed through the epidemic fever which devastated that city in 1819, and wrote a 12mo. pamphlet upon it soon after its disappearance. He was afterward appointed 'Professor of the Institutes of Medicine and Surgery and Medical Jurisprudence in the Washington University of Baltimore,' and subsequently held professorships in the Albany Medical College, New York, and the Castleton Medical College, Vermont. It was about this time that Dr. Reese took up his residence in New York. He acquired so much professional and political influence as to be appointed Resident Physician at Bellevue Hospital, a position which he retained for several years, until the office was abolished in 1849.

"Dr. Reese was one of the original members of the Academy of Medicine, and drafted its first constitution. He always took a deep interest in its affairs, was seldom absent from its meetings, and entered heartily into its discussions. He was a ready and fluent speaker, a good debater, familiar with parliamentary rules, and often succeeded in carrying his point by the skillful use of this knowledge. At the meeting of the American Medical Association held at Nashville, Tenn., in 1857, Dr. Reese was elected second Vice-President.

"As a writer, Dr. Reese was widely known, not only in medicine, but in politics, religion, etc. He wielded a rapid and vigorous pen; but he was neither happy in the choice of his subjects, nor in the manner of treating them. His arguments were too often specious, his style inflated, and his illustrations inapt. He exhibited an almost total want of power of discriminating the true character and motives of men, and was thus frequently led to attack with great vehemence the best members of the profession, and attribute to them motives which a generous mind would scorn to entertain. This unfortunate peculiarity brought him in constant and unfriendly collision with his professional brethren, and completely nullified his influence. His most useful papers were his reports to the American Medical Association, the last of which, on Medical Education, is replete with mature and well-digested views of this all-important subject."

DR. WILLIAM H. PORTER, one of the most eminent anatomists, surgeons, and medical practitioners of Dublin, expired in that city on the twenty-eighth of April, after a long, useful, and brilliant career. The immediate cause of his death was probably apoplexy of the brain. We copy the following brief notice of his career from our contemporary, the *London Medical Times and Gazette*, of May fourth:—

"Dr. Porter's University career was a distinguished one, and his classical attainments were of a high order, as was evidenced by his having attained a Scholarship in Trinity College in 1808, when only eighteen years of age. He took the degree of B.A. in the University of Dublin in 1810, and proceeded to the higher degrees of M.A. in 1814 and of M.D. in 1842. In 1814 he became a Licentiate, and in 1817 a Fellow of the Royal College of Surgeons in Ireland. In October, 1836, on the resignation of Dr. Colles, he was elected Professor of the Theory and Practice of Surgery to the College. In 1838 he filled the office of President. He was for forty-one years one of the surgeons to the Meath Hospital and County Dublin Infirmary, and since the death of Sir Philip Crampton, in June, 1858, he was the senior of the six surgeons attached to that institution. Last year, on the death of Dr. Williams, he was chosen to represent the Irish College of Surgeons in the General Council of Medical Education and Registration of the United Kingdom.

"Dr. Porter's contributions to surgical literature have been numerous and highly practical. Among the principal are his 'Observations on the Surgical Pathology of the Larynx and Trachea,' and his 'Observations on the Pathology and Treatment of Aneurism.' In 1836 he contributed to the *Dublin Journal of Medical Science* a paper on Fracture of the Neck of the Femur, an accident which he experienced in his own person not very long before his death. Among his later writings is a series of valuable 'Essays on the Natural History of Syphilis,' to be found in the *Dublin Quarterly Journal of Medical Science.*

"By his decease the surgeoncy to the Meath Hospital, the professorship of surgery in the Royal College of Surgeons in Ireland, and the representation of the College in the General Medical Council became vacant. Thus, although the Medical Act had not yet been three years in operation, the Irish College has twice lost its representative by death. Dr. Porter was seventy-one years of age."

Bi-Monthly Bibliographical Record.

AMERICAN.

Another Letter to a Young Physician; to which are appended some other Medical Papers. By James Jackson, M.D., Professor Emeritus of the Theory and Practice of Medicine in Harvard University. 12mo., pp. 179. Boston, 1861.

Microscopical Anatomy of the Lumbar Enlargement of the Spinal Cord. By John Dean, M.D. 4to., pp. 21, with four plates. Cambridge, 1861.

A Manual of Military Surgery; or Hints on the Emergencies of Field, Camp, and Hospital Practice. By S. D. Gross, M.D. 18mo., pp. 186. Philadelphia: J. B. Lippincott & Co., 1861.

A Practical Treatise on Military Surgery. By Frank Hastings Hamilton, M.D. 8vo., pp. 234. New York: Baillière Brothers, 1861.

A Hand-book of Military Surgery. By Charles S. Tripler, M.D., Surgeon United States Army, and George C. Blackman, M.D., Professor of Surgery in the Medical College of Ohio. 12mo., pp. 121. Cincinnati, 1861.

The Classification, Diagnosis, and Prognosis of Tumors. By Theodore Bilbroth, M.D., Professor of Surgery in the University of Zurich. Translated from the German by G. Baumgarten, M.D. 8vo., pp. 46. St. Louis, 1861.

The Modus Operandi of various kinds of Baths; Sea-bathing, Hot and Cold, Physiologically Explained. By John O'Reilly, M.D. 8vo., pp. 23. New York, 1861.

A Treatise on the Practice of Medicine. By Edwin Madson, M.D. 8vo., pp. 705. Philadelphia: Lindsay & Blakiston, 1861.

A Report on Epidemics and Endemics. By Dr. O. C. Gibbs, of Frewsburg, New York. (Reprint.) pp. 24. Philadelphia.

FOREIGN.

On the Treatment of Stricture of the Urethra. By Robert Wade. 12mo., pp. 108. London, 1861.

·Transactions of the Obstetrical Society of London. Vol. ii. London, 1861.

On Diseases and Deformities of the Spine, Chest, and Limbs. Part i. By R. Hughes, Surgeon to the Brighton Orthopoedic Hospital. pp. 40. Churchill, London.

Principles of Forensic Medicine. By W. Guy, M.B. Cantab. 2d edition. pp. 534. London: Renshaw, 1861.

A Manual of Qualitative Analysis. By R. Galloway, F.C.S. 3d edition. pp. 246. London, Churchill.

The Anatomist's Vade-Mecum: a System of Human Anatomy. By Erasmus Wilson, F.R.S. pp. 732. 8th edition. London: Churchill, 1861.

Handbuch d. Spec. Path. u. Therapie. Von R. Virchow. Band iii., Lief. 1.

Hints on Insanity. By J. Millar, L.R.C.P. Edin., Medical Superintendent Bothwell House Asylum. pp. 108. Renshaw, 1861.

The Genetic Cycle in Organic Nature; or the Succession of Forms in the Propagation of Plants and Animals. By G. Ogilvie, M.D., Regius Professor of Institutes of Medicine in University of Aberdeen. pp. 296. Aberdeen; Edinburgh; London, 1861.

Clinical Surgery. Diseases and Injuries of the Nose, Larynx, Organs of Circulation, etc. By T. Bryant, F.R.C.S., Assistant Surgeon at Guy's Hospital. Part iii. pp. 151. London, Churchill.

The Forms, Complications, Causes, Prevention, and Treatment of Consumption and Bronchitis; comprising also the Cause and Prevention of Scrofula. By J. Copland, MD., F.R.S. pp. 940. London, Longman & Co.

Practical Observations on the Diseases of the Joints involving Anchylosis, etc. By Bernard E. Brodhurst, Assistant Surgeon to the Royal Orthopœdic Hospital. pp. 120. London, Churchill.

Sore Throat and the Laryngoscope. By M. Prosser James, M.D., Senior Physician to the Metropolitan Dispensary. pp. 155. London, Churchill.

Constipated Bowels; the various Causes and Rational Means of Cure. By S. B. Birch, M.D. pp. 191. London, Churchill.

Communication à l'Académie des Sciences de Paris, sur l'Etablissement de l'Abendberg. By Dr. Guggenbuhl. (Reprint from the Comptes Rendus.) 1860.

Fownes's Manual of Elementary Chemistry. 8th edition. Edited by Dr. H. Bence Jones and Professor Hoffman. pp. 771. Churchill, 1861.

Diphtheria; its Symptoms and Treatment. By W. Jenner, M.D., Special Professor of Clinical Medicine, and Physician to University College, etc. pp. 107. London: Walton & Maberly, 1861.

The Eastern or Turkish Bath; its History, Revival in Britain, etc. By Erasmus Wilson, F.R.S. pp. 167. London: Churchill, 1861.

Ten Lectures Introductory to the Study of Fever. By A. Anderson, M.D., Lecturer on Medicine, Glasgow. pp. 180. London: Churchill, 1861.

THE

NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

SEPTEMBER, 1861.

Analytical and Critical Reviews.

Art. I.—*Infant Feeding, and its Influence on Life; or, the Causes and Prevention of Infant Mortality.* By C. H. F. Routh, M.D., M.R.C.P.E., M.R.C.S., Physician to the Samaritan Free Hospital for Women and Children, etc., etc. 12mo., pp. 379. London, 1860.

When an infant is provided with a full supply of milk from the breast of a healthy mother or of a suitable nurse, its diet, for at least the first eight or ten months of its existence, need give but little or no concern. If permitted to follow its proper instinct, it will be well nourished, and run little danger of injury from improper, deficient, or over feeding. The case is very different, however, when, from any cause, the infant has been deprived, either from its birth or shortly afterward, of its natural aliment. The question as to how and upon what it is to be fed becomes then one of grave importance. In relation to it serious misconceptions are constantly made by the community at large, while the most erroneous views are entertained by even the best-informed members of the medical profession. The consequence has been the infliction of a large amount of suffering and disease upon the infant population of our own and other countries, and the augmentation to a very great extent of its mortality. Nor is the mischief resulting from the want of an acquaintance with the proper feeding of infants confined to such as are unfortunately deprived of the maternal breast, and in consequence brought up by the hand, as it is termed; in some degree, it extends to nearly every infant at the period of weaning—the period when it is to be fed entirely upon other nutriment than that which had been previously supplied by the mother's milk. The evil consequences to the child of errors in diet immediately after weaning may not, perhaps, be so promptly manifested, nor to the same extent, as are those resulting from an injudicious system of feeding, in the case of infants brought up entirely by hand; yet, from their more insidious character, and the greater number by which, in this country at least, they are incurred, they become of equal if not greater importance. In every point of view, indeed, the subject of "infant feeding" is one replete with the deepest interest to all who feel that the cause of true philanthropy and the best interests of every community are to be promoted by shielding as much as possible the offspring of both rich and poor from all avoidable suffering, by reducing the amount of disease and of mortality liable to occur during the first months of their existence, and by insuring to them in after-life symmetrical and healthful frames, and a fair chance for the enjoyment of a prolonged and useful existence.

The treatise of Dr. Routh, while it recommends itself to our consideration from the nature of its subject, will be found, upon examination, to be one of the most able exponents of it, in its several departments and bearings, that has yet appeared. The author has evidently studied the subject of infant feeding thoroughly and carefully, and with great industry has collected and compared all the facts and statistics upon record adapted to throw light upon it. His general conclusions appear to be perfectly reliable, and are throughout of a directly practical application.

Some portions of the work had appeared as separate papers in the medical periodicals of England. They have, however, been all carefully revised, and in the volume before us are presented in a more matured and complete form.

Part first of the treatise is devoted to a consideration of the *mortality of infants* in the city and country, and at the different periods of the year; with an examination of some of the more prominent of the causes which influence the mortality among foundlings especially.

All authorities are in accord as to the very great mortality which takes place among the inmates of foundling hospitals; and so far as reliable statistics have been obtained, they bear out this conclusion. The cause of the mortality among foundlings has been very generally ascribed to the fact of their being brought up by the hand and without breast-milk. This Dr. Routh has shown, however, to be an error. His investigations have convinced him that there is no one law of mortality common to all foundling hospitals, or even to the same institution in different years. On the contrary, the causes of the mortality in these institutions are numerous and diversified—some of them being, doubtless, endemic to particular hospitals.

There is always a much greater ratio of deaths during infancy in cities and large towns than in strictly rural districts. Although we are in possession of no extended series of statistics in which the mortality of infants in town and country is positively indicated, yet, so far as the data within our reach have been analyzed and compared, they show very clearly the baneful influence exerted upon the health and life of the infant by the atmosphere of cities. In Ireland, while the general mortality of children under one year of age is 14·7 per cent. in the towns, it is only 8·8 in the rural districts, while that of children under five years of age is 8·1 in the towns and 4·3 in the country. The same fact, according to Dr. Routh, is true also in respect to England, and will, we believe, hold good everywhere. If, then, the mortality is so much greater among all town-reared children of tender age than it is among country children, how is it with respect especially to foundlings?

> "Unfortunately, however," remarks Dr. Routh, "after long inquiry, I do not find this distinction made in any work on foundlings which I have seen; nevertheless, I have attempted to adduce it from some figures given in the general statistics of foundlings in France, published by authority of the government. But here, as in the case of infants in general, the data being insufficient, I am unable to obtain more than an approximative result. The relative mortality, however, between town hospital foundlings and those placed in the country thus comes out more strikingly than we might have supposed. Thus, in five years, out of 52,883 *town hospital foundlings*, the mortality was 72·2 per cent. Out of 122,110 *country hospital foundlings*, the mortality was 11·5 per cent. This conclusion proves that foundling hospitals, if established at all, should always be placed in the country."

The mortality among infants, including foundlings, is shown by all writers to be greatest during the first twelve months of existence. According to Quetelet, nearly *twenty-five* per cent. of all children born die within the first year after birth. During the first year, also, the mortality is the greatest in the first month, and gradually decreases onward to the twelfth.

There is a curious circumstance pointed out by Dr. Routh, which is, that in Ireland the deaths among infants generally, during the first month after birth greatly exceed those among infants of lying-in hospitals, being about 31·6 per cent. for the civic and 22·2 for the rural districts, while in the Irish lying-in hospitals, taking the deaths of infants for ten years, from 1831 to 1841, the percentage is only 6·1.

Among the other causes of infant mortality, which more particularly affect foundlings, Dr. Routh enumerates impure air, arising, in part, from defective ventilation, but more generally, and to a much greater extent, from the mere aggregation of a number of infants in the same wards. It is this also which renders the inmates of such institutions more obnoxious to contagious and infectious diseases. The peculiar hospital atmosphere, which is generated in the best planned and most carefully conducted foundling hospitals and orphan asylums, when their wards are crowded with healthy and diseased inmates, is liable to give rise also to certain maladies which, though they may be met with without these institutions, in over-crowded, confined, and filthy dwellings and neighborhoods, are still, to a great extent, the special endemics of the former.

The milk of a strange nurse is of itself often a source of mortality in foundlings and quite young orphans. This may result from the unadaptedness of the nurse's milk, from a variety of causes, to the infant attempted to be nourished by it, its unnutritive or unwholesome qualities, or because it is not supplied to the nursling sufficiently often, or in adequate quantity, when the nurse has an infant of her own to suckle, the interests of which being, in many cases, attended to at the expense of the nursling.

> "So far, then," says Dr. Routh, "we have certain causes in operation, which are not exclusively confined to foundling hospitals, which may explain some of the mortality, viz.: Residence in town will account for from 5·07 to 6·1 per cent. for children under one year old. During the first month, if the number of inmates of hospitals die only in proportion to the number which die out of them in civic districts, the mortality may be as high as 33 per cent. Of this amount, under the most favorable circumstances, 6·1 per cent. must take place in the first month. At least from 16·6 to 34·1 per cent., or the mean of 25·3 per cent., should be put down for the effect of contagious diseases. To absence of the *mother's* breast-milk, 10 per cent. per annum may at least be referred: in all, 47 per cent., at least for children under five, from causes not peculiar to foundlings—a large percentage to be deduced from their usual mortality. It should also not be lost sight of that, as the mortality of children is generally greatest in the earlier years, and as, in a given population of foundlings, there is a higher percentage of younger children, so, necessarily, the whole percentage mortality must be greater."

The causes of mortality to which foundlings are especially exposed are numerous. Among these is set down the effects of removal. The injury which infants suffer from this source are due in part, no doubt, to want of care, defective nourishment, and partly to exposure during the passage, when this is of any distance. Another cause of mortality especially affecting foundlings is the influence of the seasons. The cold, wet, and changeable seasons being those most prejudicial to infantile life. In England, Dr. Routh makes the greatest number of deaths among young children in the public institutions to take place in the spring, the least number in autumn, while it is about the same in winter and summer. Thus, the deaths at all seasons being 100, 30·8 will occur in spring, 27·1 in summer and winter, while in autumn they will be only 14·3.

We know of no statistics from which can be determined, with any degree of accuracy, the influence of the seasons upon the mortality of infants in the public institutions in this country. Judging from the mortuary tables of some of the Eastern, Middle, and Western States, we should set down the largest mortality to the summer months; next to these would be the latter winter and early spring months; while the most friendly to infant life would be the months of May, October, November, and December.

The influence of a continued recumbent position and defect of exercise is unquestionably one of the causes of the large mortality in foundling hospitals. A child requires good food and pure air, but these are not enough to insure its health. It must be moved about, have its position frequently changed, and be carried out often into the open air and sunlight. It must be not merely well and properly nourished, but its entire hygienic management must be carefully attended to also.

The want of breast-milk is another of the especial causes of mortality among foundlings and orphans generally. Dr. Routh believes it to be, however, a less influential cause than is generally supposed. He thinks this is rendered evident by a reference to the actual number of deaths attributed to want of breast-milk, occurring among a general population, irrespective altogether of foundling institutions. From the Registrar-General's tables for London, taking the six years, 1849 to 1854, inclusive, it will be found that out of 473,865 births, 15,241, or 3·2 per cent., died from want of breast-milk, in its widest sense; or, out of 73,227 deaths from all causes, of children under one year of age, 20·8 per cent. might be referred to deprivation of the natural food.

The deductions of Dr. Routh, from the facts and statistics he has presented, are thus recapitulated:—

> "1. That for the ages of one year and under five, the mortality, even under ordinary circumstances, is in towns nearly double what it is in the country; but this difference in the mortality, according to residence, is nearly seven times as great for foundlings: therefore, foundlings should never be maintained in towns.
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> "2. That in Ireland, while it is doubtless very high in the first month, for those under one year it is only 30 per cent. in towns, and 22 per cent. in country; the worst mortality with foundlings being 50 per cent.
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> "3. That traveling in fair seasons is not dangerous to foundlings.
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> "4. That the mortality is greatest in spring, and least in autumn, with children in public institutions.
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> "5. That a chief cause in the mortality of foundlings is want of exercise, and the abuse of the recumbent position.
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> "6. That the want of breast-milk will only account for a mortality of 3·4 per cent. additional.
>
> "7. That a depraved hospital atmosphere and certain endemic contagious disorders are the chief causes of the mortality in foundling hospitals."

The *second part* of Dr. Routh's treatise is devoted to the subject of *wet nursing.*

The advantages which result to both parent and child from the use, during infancy, of breast-milk, especially that furnished by a healthy mother, as the sole aliment, is insisted upon in the outset. The more ample the supply of breast-milk, and the more exclusively the infant is confined to it during the first twelve months after birth, the more perfect and symmetrical, it has been proved, is the child developed, the more vigorous and robust its constitution, and the least predisposed is it to many of the maladies liable to occur during the early periods of existence.

The mortality of infants who are artificially fed, that is, without the breast, far exceeds that which takes place among such as are nourished entirely by the breast. It is probable, however, that some portion of the mortality among infants reared by the hand is to be attributed rather to the injudicious method of feeding than simply to a deprivation of the mother's milk.

Dr. Routh lays it down as the imperative duty of mothers to suckle their own offspring in every case in which there exists no valid and unavoidable objection to their doing so; and this duty is based, among other reasons, upon the benefits its performance confers upon both child and parent. There is a very great difficulty in procuring an adequate substitute for the infant's natural nurse in the breast of another female, suitable in respect to health, temper, competency, and trustfulness, with a supply of milk, at the same time, sufficient in quantity, of good quality, and adapted in its age to that of the infant to be nourished by it.

It is believed that the case will seldom occur when a mother need relinquish entirely the pleasing duty of suckling her infant. If she be weak, her weakness may be, in great measure, removed by a proper diet and regimen, and, if indicated, a suitable course of tonic remedies. Even when the secretion of milk is defective, it is possible in many, if not in all cases, to increase its quantity and improve its quality by a proper course of treatment.

Dr. Routh passes in brief review some of the reasons usually urged by mothers for declining the office of nurse to their own infants. First, the existence of some specific disease, such as scrofula, phthisis, mania, cancer, syphilis, and other dangerous hereditary diseases. The author admits, in the great majority of cases, the validity of this reason. Mothers so affected are unquestionably justifiable in refusing to nurse their infants. In the case, however, of syphilis and scrofula, both of which affections are often very amenable to treatment, he believes that the objection will not hold good. This is doubtless true in regard to a syphilitic taint in the mother. In such case the child is, also, most generally affected, and the treatment upon which the mother must be put for her cure will also be the one adapted to restore it to health. It should be remembered, that by putting the diseased infant to the breast of a wet nurse there is danger of her becoming contaminated. We differ from Dr. Routh, however, when the question is one of a scrofulous mother or one very decidedly predisposed to the disease. We are convinced that the good of both mother and child demands that the latter should be deprived of the maternal breast.

When it is clearly ascertained that the mother's milk disagrees with the child, it will, Dr. Routh admits, constitute also a legitimate cause for not allowing her to suckle it. Even in such a case, however, change of air and food, in respect to the mother, with wine, proper artificial food, and medicine for the infant, will, after two or three weeks of perseverance, he thinks, frequently remove all source of irritation.

"Those cases, I must say," he remarks, "which have resisted these measures, have occurred either in a very early or a very late period of nursing. In the former instances, the simple substitution of a wet-nurse seldom suffices alone. So much treatment is required besides, that it is often a difficult question to determine how much is due to treatment, and how much to the wet-nurse: still, I must admit that, in a few cases, the salutary effect of the change is very obvious. In the latter periods of suckling, *i.e.* after eight months, weaning often proves as effective as the adoption of another wet-nurse."

The whole of the remarks of Dr. Routh on the important question of the selection of a wet-nurse are pertinent and sound.

The physical qualifications essential for a wet-nurse are set down by him as follows:—

"1. *She should have good milk.*"

"Good human milk has an average specific gravity of 1032, varying from 1030 to 1034. It is always strongly alkaline; this alkalinity it usually retains from five to six days, when it becomes acid. To the taste it is sweet, much more so than cow's milk. When allowed to stand, it will be seen to separate into two portions. The superficial very white substance, known familiarly as *cream*, is chiefly the oil-globules, which, being of a lower specific gravity than the other portions of the milk, rise to the surface. The more transparent subjacent liquid, known popularly by the name of *skim*-milk, when the cream has been removed from its surface, consists of casein, sugar, and salts, held in suspension or solution in a white, opaque liquor. * * * If the subjacent portion, after the cream has separated from it, be kept any time, the sugar contained in it becomes converted into lactic acid, which gradually precipitates the casein as a curd. Rennet, or the mucous membrane of the stomach, and most acids, have the same effect. The fluid which now remains, technically called *whey*, contains still in solution a large quantity of sugar and the salts of milk, which are readily separated by evaporation. When looked at through the microscope, milk is found to consist of a colorless fluid, the *liquor lactis*, in which are floating a number of bodies: (*a.*) *Oil-globules*, similar to those found in all parts of the body. (*b.*) The proper *milk-globules*, smaller in size, varying from $\frac{1}{95000}$ths to $\frac{1}{7000}$ths of an inch. These also appear to be oil-globules, from the fact that they reflect light strongly; but from the difficulty experienced in dissolving them in ether, they are evidently covered with a layer of something else, which surrounds them as a capsule. (*c.*) There are a great multitude of *small granules* or *granulated corpuscles* floating among the milk-globules, most abundant in milk secreted at a very early period. The *liquor lactis* holds in solution the casein, though some observers believe that the external layer of the milk-globules is also made up of casein. * * * There exist, in addition, certain *volatile principles*, which may be obtained by the evaporation or distillation of milk, and to which, in great measure, is probably due the odor of new milk. * * * It may suffice here to make a remark in reference to two of these—the *extractive matters* and the volatile principles of milk. Of the first it may be stated, that most of those peculiar changes in milk which render it detrimental, do not occur so much in the casein, sugar, butter, or salts as in the extractive matters, concerning which, it must be added, in the emphatic words of Lehmann, so aptly used by Becquerel and Vernois, 'we know absolutely nothing.' The same is true in reference to the volatile principles, the nature of which has not yet been determined by chemical inquiry, although several experiments for that object have been made."

"2. *Her hereditary predisposition should be good.*"

Every female in whom there is present an evident predisposition to consumption, or tuberculosis generally, to cancer, mania, and other hereditary affections, as well as every one in whom there exists the slightest taint of syphilis or other similarly communicable disease, should be invariably rejected as a wet-nurse.

"3. *The age of a nurse should not exceed thirty, nor be much under twenty-five years.*"

It is true, Dr. Routh admits, that the milk is not found very much altered, chemically or microscopically, between the ages of fifteen and forty. Still, at the extremities of the scale, the differences are obvious.

"In the very young, the butter, casein, and solid matters generally—excepting the sugar, which exists in diminished quantity—are on the increase. In the older women there is a larger proportion of water and sugar, the amount of butter and casein is diminished, although the latter is still in excess, as compared with the normal condition, from which it may be inferred that the milk of a very young person is less digestible, and therefore less to be recommended for a delicate infant."

"4. *The nurse should not have been confined many months before or after the child's mother.*"

The composition of the milk undergoes a material change as the period of lactation is prolonged; hence the female may supply a milk which will prove injurious to an infant younger or older than her own. The influence exerted by the periods of lactation upon the milk are thus summed up by Becquerel and Rodier:—

"The specific gravity varies much. The proportion of water increases from the fifth to the sixth month, and from the eleventh to the twelfth; it diminishes from the first to the second, and from the eighteenth to the twenty-fourth. The solid matters increase in a marked degree from the first to the third. The sugar decreases during the first month, but increases from the eighth to the tenth month. The butter increases considerably up to the sixth month, and then considerably decreases from the fifth to the sixth, and from the tenth to the eleventh month. The salts undergo a slight increase in quantity from the first to the fifth month, then correspondingly decrease. These changes are really most important to trace, as they are an index as to the substitute which, bearing a proper proportion to the amount and quality of nutritive matter required, is best fitted for a child whom it becomes obligatory to wean, or for whom another diet is imperatively demanded. It must be confessed, however, that the constituents of milk vary so much that it is very difficult readily to estimate its goodness from their present quantity. Its composition varies also, within the limits of health, so much, that we have often no better method of testing it than trial with the child, when, if it agrees with it, we may conclude it is good."

"5. *A wet-nurse of a melancholic temperament should be preferred.*"

This requirement is founded upon the supposition that *brunettes,* whom Dr. Routh supposes to be of a melancholic temperament, give generally a milk richer in solid constituents than that of blondes, to whom he ascribes a sanguineous or scrofulous temperament. We have found good milk furnished by the breasts of females, when young, healthful, and robust, of all varieties of temperament. Females easily excited and given to violent fits of passion, are always, however, to be objected to as wet nurses, as also those of an eminently nervous temperament, who are excitable, fearful, hysterical. In all such it is notorious that the milk is liable to undergo a change, suddenly or slowly, which is particularly injurious to the infant suckled at the breast.

"6. *The wet-nurse should have not only good milk, but it should be in sufficient quantity.*"

During the first year of life, to supply the amount of nutritive matter demanded by the constant and extensive organic changes which then take place, and sufficient materials for the rapid growth and development of the body, requires a large quantity of food; much larger, proportionably, than would suffice an older child or an adult.

When the breast of a suitable wet-nurse cannot be secured, exclusively, for an infant, Dr. Routh recommends that a married woman who is suckling another child be employed to assist the artificial feeding.

The *third part* of the treatise is devoted to a consideration of *the causes of defective assimilation* in children, in reference to the principles of alimentation.

The defect of assimilation observed in infants brought up without the breast, Dr. Routh believes to be the result, not so much of their being thus deprived of a proper supply of good breast-milk, as of injudicious feeding, and general mismanagement.

From an analysis of the Registrar-General's reports, he finds that the mortality among children under one year of age from disease of the nutritive function is 22·3 per cent., while that from the proper diseases of infancy is only 7·1. This striking preponderance in the early months of existence of diseases of the nutritive function—diseases of the abdominal organs, atrophy, marasmus, rickets, etc.—is shown also by a reference to the records of hospitals, etc., as well as by the repeated statements of physicians based upon their own clinical experience in the rounds of private practice.

All those affections of infancy which can be fairly attributed to a defective, impeded, or disordered condition of the formative, reproductive, and nutritive processes, brought on mainly by injudicious feeding and nursing, bad air, and want of cleanliness, Dr. Routh includes under the one general denomination of "*defective assimilation.*" As predisposing causes of this morbid condition he enumerates a hereditary tubercular taint, and debilitating diseases, more especially the sequelæ of the exanthemata.

Defective assimilation presents in its course three distinct stages. In the *first* or *premonitory*, the child may at times appear as in ordinary health and spirits; generally, however, it is peevish and irritable at intervals; the flesh becomes flabby and harsh to the feel; the food taken is often vomited, having a very acid smell; there is loss of appetite and disturbed sleep; constipation may be present, the stools when passed being like clay with white lumps in them. In the *second* or *emaciative* stage, there is an increase of all these symptoms; a more decided irritation of the intestinal canal; more frequent vomiting; with perhaps diarrhœa, the discharges being deep green, very offensive, and so acid as often to excoriate the anus and neighboring parts; there is rapid emaciation; the eye assumes a peculiar bright expression; the child acquires an aged appearance. Sometimes there is no diarrhœa; when, however, stools occur they are loaded with undigested matters. In the *third* or *exhaustive* stage, all the above symptoms are present in an aggravated degree. The child eagerly craves food, nothing seems to satisfy it; but all the food it takes does it no good. Apthæ appear in the mouth, and gradually extend downward into the alimentary canal. There is usually an excessive and unmanageable diarrhœa, the stools being chiefly composed of undigested food. The emaciation is excessive. The child has the appearance of a wrinkled old man; the eyes are unnaturally bright and seem to project from their sockets; it does not sleep, but is constantly whining and crying for food, until it expires in an extreme state of inanition.

When the disease assumes the apthous form, especially in institutions where a large number of children are crowded together, according to Dr. Routh it may acquire an exceedingly malignant and contagious character. It will then often produce, in those to whom it is communicated, an apthous condition not only of the mouth, but also of the conjunctiva and other mucous membranes.

When diarrhœa is absent the disease may run a protracted course of many weeks.

> "Sometimes the disease having reached the second stage, or while yet in the first stage, does not pass on to the third; that is, the *primary* assimilation is defective only, but not entirely prevented. *Tuberculosis*, with other developmental disorders, then makes its appearance, generally as *tabes mesenterica*, more rarely as *phthisis*. By far the most common of the diseases it gives rise to is *anœmia*, with more or less of *rachitism*. Painful as these latter complications are to behold, they exhibit, nevertheless, a fortunate phase in the original disease, because, under proper treatment, they are comparatively manageable, whereas defective assimilation, in the third stage, is very seldom if ever cured."

The *post-mortem appearances* are, great emaciation; an almost entire absence of fat; scanty cellular and wasted muscular tissue. When diarrhœa has been present, the entire alimentary canal is beset with red patches and aphthæ from the size of a pin's head to that of a bean, which, after a time, become loaded, more or less, with the *öidium albicans*. Peyer's glands are also much reddened and swollen. Sometimes apthæ are absent, and the mucous membrane, from below the liver, is much reddened, having a coating of bloody and intensely acid mucus. In cases unattended with diarrhœa there is paleness of the intestinal mucous membrane, with considerable enlargement of Peyer's glands. These often project in the form of round patches some three or four lines broad by ten or twelve long, apparently filled with exudation, precisely similar to the appearance they have in cases of Asiatic cholera.

The first and most essential step in the prophylaxis and cure of defective assimilation is a proper attention to the diet of the infant, in respect to the quality and quantity of its food, the manner of feeding, to its cleanliness, its warmth, the purity of the air it breathes, and its hygienic management generally. It is essential to the well-being of the young infant, especially, that it be kept warm, particularly during the times it is fed. It is important, also, that it be made to assume, when in the act of taking food, the semi-erect, which is the natural position.

These principles of treatment are separately discussed by Dr. Routh. In respect to diet, he has shown, from an examination of the aliment of all young animals, that animal food is indispensable to the human infant; this alone furnishing the elements which are required for the proper nourishment, growth, and sustenance, generally, of the body.

The most suitable food in the case of the human infant is without dispute that supplied by the breast of a healthy mother. This contains in proper proportions and beautiful combination the plastic, hydro-carbonaceous, and saline ingredients necessary for the support of life and to meet the exigencies of the system in the early periods of existence. Hence, when pure and taken in sufficient quantity it is capable alone of sustaining the vitality and vigor of the human organism for any length of time.

Dr. Routh advances a proposition of very great importance, in the alimentation of infants and very young children, but which is too often, to a certain extent, lost sight of, if not entirely ignored, by both parents and physicians; it is, that the human being, during the early period of existence, is so constituted anatomically and physiologically, as to be capable of digesting animal food alone.

A full supply of milk from the maternal breast, or that of a healthy and suitable nurse, is all that is required by the infant, so far as food is concerned, for the first year, at least, of its existence. When, unfortunately, however, the infant is deprived of its natural food, the important inquiry presents itself, is there any alimentary substance by which the absence of that food may be supplied?

The simplest substitute for human milk would seem to be, very clearly, milk from another animal. The milk of every animal is not, however, equally adapted to supply to the human infant the want of its mother's milk:—that furnished by the different mammalia presenting a very great difference in its composition. Cow's milk is usually employed, though the milk of the ass is said, by some, to come nearer in its properties to human milk, and after that, the milk of the goat.

Dr. Routh has very clearly shown that the popular opinion once current in respect to ass's milk is incorrect. It contains certainly more water, only about half as much casein and butter, with about twice as much sugar and salts. It is believed that the purgative and sickening effects occasionally observed to follow its use are to be attributed to the excess of saline matters. Its deficiency in casein and butter may be obviated, Mr. Lobb remarks, by adding to it some two and a half per cent. of cream. In this form, he considers it to be a very good substitute for human milk, and one that could be readily procured at a comparatively trifling expense.

Goat's milk, according to the analysis of Boysson, has a composition not unlike human milk. It contains, it is true, more sugar and salts; still, it approaches much nearer to human milk than that of the ass. The best quality is furnished by the goat, we are told, about two months after kidding. The peculiar odor sometimes observed in goat's milk from the presence of hircic acid is disagreeable to many who use the article for the first time. This odor is not essential to the milk. It is chiefly present, and to the greatest extent, when the goat is allowed to associate with the ram. It is greatly diminished when the animal is kept clean, and entirely removed if it be frequently washed. The milk of the hornless goat has scarcely more odor than that of the cow.

Cow's milk is the one which in England and this country is most commonly resorted to as a substitute for human milk. From the most reliable analysis it appears that, compared with the milk of the human female, it contains less water, a greater quantity of solid matters, less sugar, and more casein and butter; it is evident, therefore, that it is but illy adapted as a substitute for the natural aliment of the human infant.

A fact, commented upon at some length by Dr. Routh, should be kept constantly in mind—namely, that the milk of all animals undergoes important modifications, according to the quality and sufficiency of food upon which the animal is fed, the manner in which it is cared for, and a number of other circumstances, all of which must be taken into consideration in deciding upon the eligibility of the milk as a substitute for that of the human female. This is especially true in respect to the milk of the cow, in the qualities of which a wide difference will be found to exist, according as it is furnished by an animal kept in town or in the country—one confined in small, damp, filthy stables, and one allowed to roam and feed at will upon rich meadows. The milk which is furnished by the animal during the summer and winter differs also. It is unnecessary to refer to the deterioration of milk as a food for infants by various adulterations, by the spontaneous changes which it undergoes when kept too long, and by the removal of the cream in part or entirely.

Among other substitutes that have been proposed for human milk, Dr. Routh enumerates particularly cream, eggs, dessicated milk, bone soups and jellies, beef-tea, and raw meat.

A mixture of one part cream and three of water will often furnish a good diet, when the milk of the cow will be found to create in the stomach a good deal of acidity. The tendency to the formation of acid may be still further obviated by adding to every half pint of the cream half an ounce of lime-water, which will have the good effect also of promoting assimilation by insuring the solubility of the casein, and the emulsion of the fatty matter.

Some of the forms of dessicated milk, when dissolved in a proper amount of water, will often furnish a good substitute for the breast-milk of the mother, or for that of a suitable and healthy nurse.

Eggs very nearly resemble milk in their composition, and form a good substitute for that of the human female. When used, the eggs should be as nearly raw as possible, or only heated to 130° Fahr. From the large amount of casein it contains, the egg should be diluted, and if, at the same time, a little sugar of milk is added, it will then form a very fair substitute for breast-milk, as the diet of a young infant.

In respect to bone soups and jellies, Dr. Routh remarks that the gelatine which is their chief ingredient, although a nitrogenous substance, is, like hair, innutritious. It overloads the blood with nitrogenous products, rendering it impure and unfitted to supply the wants of the system. As an emulcent in cases of intestinal inflammation, or a vehicle for the exhibition of wine or particular remedies, jellies may be occasionally useful.

Beef-teas, when properly prepared, form in many cases, in the absence of the breast-milk, a useful and sufficiently nutritive diet.

> "If," Dr. Routh remarks, "beef-tea be prepared on Liebig's plan, and then, after a few hours' maceration in cold water, the artificial gastric juice be added, and the temperature raised to 70° Fahr., some of the fibrin will be taken up as well as the albuminous matters before in solution in the supernatant water, and a beef-tea very rich in azotized food, in fact an artificial chyme, will be obtained. For cases of defective or weak assimilation, the advantages of such a beef-tea are very obvious."

The same result may be obtained by addition of liquor pepsinii, or the essence of rennet. Dr. Routh suggests the addition to beef-tea or milk, of a solution of sweet-bread, pancreatic tea, or broken-down pieces of the pancreas itself. He believes that it would facilitate the saponifaction of fatty substances, the conversion of starch into sugar, and probably also the solution of azotized matters.

We have now the evidence of many distinguished practitioners as to the facility with which raw meat, as administered by Professor Weisse, of St. Petersburg, is digested by the infant stomach and the avidity with which it is taken. The lean of either beef or mutton, very finely shred, may be given to children of a year old, at first in portions of two teaspoonfuls four times a day, and afterward, if they crave it, the quantity may be increased. In the exhaustive diarrhœa of defective assimilation, Dr. Routh views it as his chief remedy. Meat to be given raw should be carefully examined to insure its being healthy in quality and free from parasites. If it be gray, and there are spots on its surface, it is to be suspected. A glass of small magnifying power will at once, however, remove all doubt.

Dr. Routh directs attention next to the importance of the presence of a due amount of saline ingredients in milk, and in its substitutes, in a dietetic point of view. Upon the presence in the food, in proper proportions, of phosphate of lime, especially in combination with carbonate of lime, is dependent the due solidity of the bony skeleton. Its presence, likewise, has the property of enabling the blood to take up more carbonic acid, which, when in excess, facilitates the solution by the blood of carbonate of lime, and its deposit in the bones. The presence of phosphate of soda causes the fatty acids to be converted into emulsions in the chyle, so as to admit of their ready assimilation in the system. The importance of a due amount of phosphoric acid and of chloride of potassium in the food of infants, and the important part these substances play in the functions of cell generation and of nutrition generally, is dwelt upon at some length by Dr. Routh.

While the diet of the infant, to render it well adapted to the proper support and due and symmetrical development of the infant organism, requires to be composed of a just amount of the fatty, saccharine, and caseous elements, an excess of either of them is attended with many disadvantages, which are pointed out by our author. The proper portion of butter in the food of infants he lays down as 1 part in 2·8, which is its proportion in human milk, or, taking solid constituents only, as much as 1 part in 3; of sugar, the proper proportion in milk should be 1 part in about 2·3, or, taking solid constituents, 1 in 2·6. The proportion of casein varies from 20 to 40 per cent. in 1000 parts, or, in reference to solid constituents, 1 part in 5 to 1 part in 10.

All of the several ingredients which enter into the composition of the milk of the human female must be present in whatever food is given to an infant, in order to adapt it for the proper support and development of the system. It is essential to keep this in mind in directing a course of artificial alimentation.

The next questions considered by Dr. Routh are—1, the means of correcting inferior milks, so as to adapt them for the sustenance of infants; and, 2, the preparation of a fluid to resemble human milk. In respect to the first, he refers with approbation to the plan of Dr. Merei, who uses, to dilute milk with excess of casein, a decoction of arrow-root instead of water; in this manner furnishing a substance which, by its mechanical properties, prevents to some extent the irritation of the intestinal mucous membrane. In the case of young infants cream is also to be added.

> "If an infant be tolerably strong and regular in his bowels, and it has to be bottle-fed, under four months of age, a mixture of first-rate quality of milk simply with water, in equal proportions, or, after three or four months, one part of water to two of milk, agrees well, if given at a temperature of 90°. For children liable to diarrhœa, a very thin and weak infusion of anise-seed tea, instead of water, may be substituted; where the gripings and diarrhœa are severe, it is well to combine a teaspoonful, three or four times a day, of dill or peppermint-water and water in equal parts, with lime-water and a trace of opium to relieve irritation."

For the several methods furnished for the preparation of a suitable artificial milk we must refer to the work itself.

Dr. Routh discusses at great length the subject of vegetable substitutes for human milk, and proves very clearly their entire unadaptedness for the nourishment of an infant, in the early period at least of its existence. That much suffering and serious disease, and many a death among young infants, have been produced by the attempt to rear them on farinaceous preparations, we are convinced by what has fallen under our own observation. Dr. Routh would proscribe vegetable food entirely from the dietary of the infant previously to the eighth month. The organs of digestion will have reached, he believes, that degree of development at the latter period which capacitates them for digestion and assimilation of vegetable aliment. But even then he insists that only such as is most easily digestible should be at first used, and that the animal milks be given in combination.

Part the fourth is devoted to a consideration of the general treatment of defective assimilation.

The importance of the mother's breast-milk to secure regular and perfect assimilation in the infant has already been pointed out, and the very great difficulty to supply the want of it by the substitution of a proper wet-nurse or by hand-feeding. Dr. Routh consequently insists upon the importance of securing the maternal breast-milk to the infant as long and to as great an extent as possible. Even when unable to supply sufficient for its support, the mother should not be allowed to desist from nursing, but her deficiency of milk should be made up by giving to the infant artificial food.

Defective lactation in the female, Dr. Routh refers either to a state of hyperæmia consequent upon overfeeding, etc., a weakened or anæmic state of the body, or a torpor of the mammæ. The first cause is the least common and most easily remedied; the third is the most common. It usually occurs in females of middle age, or those who have married late in life; particularly such as are somewhat masculine in form and character. It may result from paralysis, mental emotion, disease of the sexual organs, with or without atrophy of the mammary glands, excessive obesity, exposure to impure air, or from the neglect of regular lactation. When resulting from hyperæmia, Dr. Routh directs a gentle purgative, a simple, unexciting diet, and the entire relinquishment of fermented or distilled liquors. In regulating the diet care should be observed, at the same time, that a sufficient amount of nutritious food be allowed to prevent an entire suspension of the secretion of the milk. When defective lactation is connected with debility or anæmia, the diet should be nutritious; light stimulants and tonics are to be administered, and daily exercise, with exposure to a pure free atmosphere directed. When there is complete torpor of the breasts, in many cases lactation cannot be restored; in others, however, a due secretion of milk may be induced by artificial suction, by electricity, and by a proper diet and regimen, by certain local applications, and perhaps by *galactogogues*, given internally. Among the latter, a decoction of the leaves and stalks of the *palma christi* or *ricinus communis*, and an infusion of fennel seed, are noticed as among the most reliable.

When there is no possibility of suckling the child at the mother's breast, and a suitable and trustworthy wet-nurse cannot be procured, the milk of the ass, goat, mare, or cow, must be resorted to for its food. When the milk of the cow is the food chosen, it should be obtained from a healthy animal at grass, or, during the winter season, one kept in a clean, well ventilated stable, and fed on suitable and sufficient food. The milk should be given diluted with an equal quantity or twice as much water, according to the age of the infant, the extent of the dilution being less according as the child advances in age. When the dilution is that of two parts of water to one of milk, one to two drachms of refined sugar should be added to each pint, and with every pint of diluted milk there should be mixed an ounce to an ounce and a half of lime-water, to neutralize the amount of acid that may be present, and which, if not corrected, will be productive in the infant that partakes of it of frequent hiccough, occasional crying, especially after feeding, with drawing up, perhaps, of the legs, followed by loose, greenish discharges from the bowels. When vomiting of matters having an intensely acid smell is present, the addition to the milk of lime-water in excess is indicated. The presence of flatulence and colicky pains call for the use of some light carminative; or, in severe cases wine-whey, made by adding to two parts of boiling milk one of good sherry or port wine.

The inferior kinds of milk may be corrected by the addition of arrowroot and cream, directions for which are given by Dr. Routh. In cases where obstinate diarrhœa is present, rice-water, instead of simple water, should be used as a means of dilution.

In some cases the diarrhœa is attended with great debility and extreme irritability of stomach; no kind of food is retained, even those substances which had before agreed best with the infant are rejected. In such cases Dr. Routh strongly advocates a resort to a diet of raw meat; it often, he assures us, will settle the stomach and intestines when every other form of aliment is rejected by vomiting, or passes quickly through the bowels unchanged. From ample personal experience of its good effects, he pronounces it to be one of the best and surest remedies we possess in cases of infantile atrophy from defective assimilation.

In the treatment of the atrophy of infants consequent upon defective assimilation, feculent and saccharine articles of food must be entirely proscribed. In many cases albuminous and oily substances, milk, even that of the female breast, will pass through the entire alimentary canal without having undergone much if any change. From diet in such cases little can be expected.

To remedy the defective assimilation in these cases, it has been proposed to administer artificial gastric and pancreatic juices, and the phosphate of soda. The remarks of Dr. Routh on the effects of these articles in facilitating the digestion and assimilation of albuminous food, of fatty matters, and perhaps of sugars also, are full of interest, and may be consulted with profit. The fatty acids may be given, and will be found to be readily absorbed, when the fats themselves remain unacted on. Dr. Routh thinks that the good effects of cod-liver oil in the atrophy of infants is due to its excess of fatty acid, and that the same is true in respect to butter. Children will often be found to thrive well on bread and butter when no other food is assimilated.

In the milder cases of the disease, by due attention to the diet and regimen of the infant, with the occasional use of carminatives, alkalies in small doses, and, when needed, half a drachm or so of castor oil, the cure will often be readily effected. In most cases the cod-liver oil, to the extent of a teaspoonful, with the addition, if there is much acidity, of one or more drops, according to the age of the child, of liquor potassa, will be found useful. When there is much indigestion the oil may advantageously be combined with from half a drachm to a drachm of the essence of rennet. In more severe cases, when diarrhœa is present, the best remedy, according to Dr. Routh, is the nitrate of silver in the dose of one-sixteenth to one-eighth of a grain; the sulphate of copper, in the same dose, is sometimes beneficial. All other astringents he pronounces of little avail. When the patient is nervous, over-excited, and entirely deprived of rest or sleep, anodynes become absolutely necessary. Under such circumstances Dr. Routh recommends two to five drops of henbane, in a teaspoonful of dill water at night. After a week or ten days the child will be found to rest without its use. Opium or its preparations is always to be considered a very dangerous remedy in the case of young children. A single drop of laudanum has been known to destroy life. Dr. Routh, however, remarks that when given in the dose of a quarter drop, gradually increased, and its effects carefully watched, the danger attending its use in infants may, in a great measure, if not entirely, be obviated.

When there is feverish excitement, which may come on at night, and is in a great measure the result, doubtless, of gastric irritation, Dr. Routh recommends, as the most effective remedy, external inunctions, with oily or lardaceous substances. In what manner this inunction exerts its curative influence he is unable, satisfactorily, to explain, but of the fact of such influence he has entirely satisfied himself. He assures us that, if the surface of the child be completely anointed with a mixture of suet and sweet oil, of sufficient consistence to allow it to remain on the skin, this will be found, at the end of some three hours, or perhaps sooner, to have become cool and soft, while the anorexia will have disappeared, and often there will quickly ensue a comfortable sleep. The next morning the child should be washed in a warm bath. It is said that the feverish excitement will be, in general, entirely removed after two or three inunctions, the irritation of the alimentary canal being usually, at the same time, greatly benefited. When, in connection with emaciation, there is hectic fever, inunction of the surface with cod-liver oil will often remove both emaciation and fever, and improve greatly the general condition of the patient. In cases attended with dyspepsia and great emaciation, Dr. Routh states that milk baths have been found very effective; he supposes that absorption of the fatty and nutritive matters takes place through the skin. When food cannot be taken into or retained upon the stomach, nutritive injections will sometimes prolong the patient's life long enough for the irritation of the stomach to subside, and enable suitable aliments to be given by the mouth. Even cod-liver oil, Dr. Routh remarks, will be absorbed when injected into the rectum.

The milder forms of aphthæ attendant upon defective assimilation will generally yield readily to borax dissolved in honey, weak solutions of honey and other simple remedies. The malignant or contagious form demands a more vigorous treatment. The free use of wine-whey or of wine will be in general required. As a local application, the most useful, according to the experience of Dr. Routh, is a weak solution of nitrate of silver, applied by means of a sponge, two or three times a day, or the tincture of sesquichloride of iron, from one part of the tincture to from seven to an equal proportion of water. When the throat or nasal mucous membrane is covered with aphthæ Dr. Routh uses the weaker solution, which he injects, by means of a fine syringe, down the throat or up the nostrils. In conjunction with the foregoing treatment a proper hygienic course must be instituted. The infant must be kept dry, warm, and scrupulously clean, and exposed to a pure free atmosphere. Disinfectants are to be resorted to, and every measure taken which is adapted to prevent the development of that "hospital atmosphere," which is invariably generated when many children are congregated together, and which is always injurious in its effects, but particularly so in badly constructed buildings, which are illy kept, and located in damp and unhealthy neighborhoods.

The foregoing analysis will give to our readers a tolerably correct idea of the general scope and character of the work before us. The facts and arguments of the author are calculated to produce a radical and much needed reform in the feeding of infants, and in the management of the morbid results of the errors that are so constantly committed in respect to it.

ART. II.—*Leonardi Botalli Astensis, Philosophiæ et Medicinæ Doctoris, Christianissimi Regis Caroli IX., Serenissimæ Reginæ et Invictissimi Ducis Brabantiæ, Andium etc., Comitis Flandriæ etc. Consiliarii et Medici, Opera Omnia Medica et Chirurgica. Hac postrema editione à mendis repurgata, methodicè disposita, paragraphis distincta, notis marginalibus, et authorum testimoniis aucta, hinc inde annotationibus illustrata, prodeunt e musæo* JOANNIS VAN HORNE, M.D., Anat. et Chir. Prof. Ordinarii in Acad. Lugd. Batav. Lugduni Batavorum ex officina Danielis et Abrahami à Gaasbeeck, 1660. 12mo.

IT is a remarkable circumstance in the medical history of the present time that a remedy, which only a few years since was familiarly employed by nearly every American practitioner, has so far gone out of use that very few and exceptional cases are now met with in which it is resorted to by the physicians or readily accepted by the people. Thirty or forty years ago the case was different; as both the people and the medical men were alike prone to avail themselves of phlebotomy as a cure or as a safety in even trivial disorders or accidents. A physician who was opposed to blood-letting forty years ago, was looked upon with distrust—as a timorous and unreliable practitioner; whereas he who now resorts to his lancet boldly, is regarded as a Sangrado, and, by some persons, looked on as given to vampirism; for to bleed a sick man has been charged as an act of vampirism.

Seeing, then, that so great a revolution in private and professional opinion has taken place, it would appear to be not ill timed for us to inquire into the facts, and endeavor to learn whether we moderns are wholly in the right, and our predecessors wholly in the wrong; we, in almost wholly ignoring—or, to say the least, neglecting to use a remedy of acknowledged efficacy, and they, in applying it to a perhaps dangerous excess.

It is certain that the use of blood-letting, as a means of curing or of modifying the course of diseases, is one of those of the extremest old date. Hippocrates, the father of medicine, made a frequent use of it four hundred years before the Christian era; and as he is justly to be considered as the general representative of medicine for the entire period from the war of Troy, in A.C. 1100, down to his own date, it is certain that we have, in phlebotomy, one of the earliest resources of civilization against the pains and the risks of disordered health. Certainly mankind have had recourse to it under this apparent necessity, for at least three thousand years; and it is curious to inquire why they have of late so generally discarded it.

The venerable Dr. Jackson, of Boston, so late as March of the present year, has published a volume containing "Another Letter to a Young Physician," etc., in which, at page 55, speaking of the change as to venesection, he says:—

> "I can hardly say just when it began. For the last *twenty years*, at least, venesection has almost gone out of use among us in medical, if not in surgical practice." * * * "Nevertheless I feel persuaded, from my own observation and experience, that the use of the lancet should not be altogether abandoned," etc.

Our own experience in medicine now extends over more than fifty-two years; and we coincide with Dr. Jackson's opinion that the change occurred about twenty years ago, or about the year 1840; and that the change took place without any known excitement, and silently and gradually; without any notorious discussion, or any conflict of opinion concerning it among leading men in the profession.

Having grown up and having participated in the transactions and in the times when the use of venesection was carried to the greatest extent in the United States, and having lived to witness its almost entire abandonment by both people and physicians, we often ask why this change took place, and whether similar changes in regard to it are recorded in the history of medicine; and if so, then whether it may reasonably be expected that the remedy shall again come into favor, and afterward decline as the cycles of opinion shall roll around.

It was stated above that the father of medicine, who, as a representative man, may be regarded as a bright reflection of the lights of the ages that preceded his own, does show us in his works that for more than a thousand years before our era, phlebotomy was in use as a means of cure. Yet, within one hundred and fifty years after his death, a violent opposition to it was set on foot by Chrysippus, and a war to the death waged against it by his pupil Erasistratus, at the Alexandria school, and by his disciples and followers.

It was against this heresy in medical practice that Galen raised his voice; and it is to Galen that is due the credit, if any, of re-establishing the lancet in the public favor. The eloquence and learning of Galen placed him at the head of the whole medical body in the world, and the reputation and authority he attained held on in one steady, uniform course of dictatorship during some fifteen centuries. This great authority of the physician of Pergamus did therefore uphold our remedy in the confidence of the medical people and the populations everywhere.

It was more than three centuries subsequent to Galen that Oribasius published his works on medicine, and those works show that the Emperor Julian's archiater was as bold a bleeder as Galen himself, or as our illustrious American, Benjamin Rush. In the long course of this Galenical supremacy, there arose many men of independent judgment, who, though acting under the dominion of his authority, might make use, some more, some less, of phlebotomy in their practice; but the employment of the lancet, so far as I can learn, was never so generally abandoned as it began to be about the year 1840; and it is equally true that as a remedy, it was never carried to such excess as it was carried to from about 1580 to 1750, when it fell off considerably, to be reinstalled in favor, particularly in the United States, by the lectures and publications of Dr. Rush.

The writer of this had the happiness to be an attendant at the course of lectures in the University of Pennsylvania of Drs. Rush, Physick, Chapman, and Dewees, all of whom were bleeders of the highest mark. Perhaps no man of modern times was a more profuse bleeder than Professor Physick, who, in one of his lectures on concussion of the brain, related this anecdote of his master, John Hunter: a man who had fallen from a height was brought into Mr. Hunter's ward insensible from concussion, and when Mr. Physick reported the case to the distinguished surgeon, he asked: "Shall I bleed him, Mr. Hunter?" "Bleed him, sir?—bleed him in concussion of the brain, sir! No, sir: cover his head with cold wet cloths until he reacts, and then bleed him, sir; bleed him to death!"

In Dr. Physick's time no person had become acquainted with the antiphlogistic properties of nitrate of silver as a remedy for the inflammations of the conjunctiva. It was then held as a reproach to any practitioner who should allow an eye to be lost from chemosis, or any form of acute ophthalmia. At page 134 of Dr. Jackson's letter, above cited, in relating the medical case of Prescott the historian, who in his early youth was attacked with a rheumatic chemosis, that practitioner tells us that, in the course of five days, the youth lost, "by general and local bleeding, more than seven pounds of blood;" a fact that serves to show how prone our people were to rely on the curative powers of the lancet, even at Boston, where the practice is now almost ignored.

As an exemplification of the habits of practice in Philadelphia, I shall relate that about forty years ago I attended a stout woman here, who was near fifty years of age. She was attacked with an alarming inflammation of the conjunctiva, which assumed the form of chemosis, and threatened to destroy vision by producing opacity of the cornea. Having been instructed by Prof. Physick, and having adopted his views of treatment for such ophthalmia, I bled the patient very freely, and made use of other measures as juvantia. The bleedings were repeated day by day, but without making the least impression on the diseased eye. Still, tortured by the thought that I should inevitably lose the eye, I persevered in applying the *remedy;* so that at length she fainted so badly as to cast me almost into despair. Under these circumstances I visited the Professor, who kindly engaged to meet me in consultation. I had laid before him the whole history of my proceedings, and told him that I had carried out his instructions to *outrance*, and dared not to repeat the operation. Dr. Physick paid the visit. Light was momentarily admitted to the darkened chamber. He touched the wrist, depressed the lower lid, and said, "that will do." When we were met in another chamber, I said: "You see, sir, that I have bled the woman as much as it was possible to do without danger, and now I shall lose her eye." "Not at all, not at all, sir," he said; "you should bleed her again, and you should order the bleeder to return to-morrow morning to repeat the operation, and when that is done tell him to come back again the next day if the eye should not be recovered." Poor Mrs. Smith was duly bled again, and Mr. Ripperger came and bled her on the following morning; but on the third morning, as the ophthalmia was clean gone, she lost no more of her vital fluid. Nor did she afterward suffer the least inconvenience from such a violent method of cure. Indeed, I have sometimes been almost convinced that a woman cannot be injured by blood-letting, seeing that any one would stop, in time to avoid dangerous consequences, however bold and uncompromising he might be in the use or the abuse of this great remedy.

Now that blood-letting is so much gone out of fashion in the world, both European and American, the question ever comes up, why is it that in reasoning by induction, which consists in collating and comparing and judging from the facts, we should in our modern induction cast aside all the facts accumulated during more than three thousand years of observation and records, and rely solely upon those observed in the short space of the last twenty or thirty years only?

Some persons have argued that the discharge of venesection from the common routine of medical practice is attributable to the example of the Hahnemannists; but I consider that conclusion to be too humiliating to our medical philosophy to be deserving of our regard. It is far more probable that the silent change in professional opinion is due to the discovery of the cell-life by the histologists, and that the new doctrines of absorption by cells, and the consequent new lights we enjoy on the subject of nutrition, are the real cause of the lapse of public opinion on this topic. It may be, however, that the revolution is an inscrutable consequence of what Sydenham denominated a change in the constitution of the air, one in which diseases of an inflammatory type do now rarely call for the interposition of phlebotomy as a remedy, which, in disorders of the same name, would be incurable without the loss of blood. If this be the true interpretation of the curious incident in our medical history, the physician is now living who shall see the lancet reinstated in all its authority and usefulness; and this is what I now believe. I say I believe this, because I cannot understand that human opinions upon so economical a matter as a thirty-century-old habit and practice, can be changed out of mere caprice, and much less that our boasted modern wisdom so infinitely excels that of our forefathers as to warrant us, reasoning from induction, to fly in the face of Bacon, and trample under foot more than 10,000 per cent. of the facts on which that induction ought in fairness to be founded.

LEONARD BOTALLI lived in an age when, from some cause now unknown, the doctrines of Hippocrates, of Galen—nay, of the long-passed centuries—ceased in a measure to be respected, and hundreds of sick and wounded people were permitted to languish in pain and to die, because society, and the doctors as well, had begun to deem it unfashionable and unwise and rash to take blood as a means of cure.

Botalli was born at Asti in Sardinia, some thirty or forty miles southeast of Turin. It is not known in what year he was born, but his tract, "De Curatione per Sanguinis Missionem," was first published at Leyden in A.D. 1580; and in the copy before us, whose preface is dated by him at Antwerp, in the month of June, 1582, he says, at page 336, that he "has now been in the habit of bleeding, as a means of cure, at least forty years;" from which we may conclude that he was in practice as early at least as the year 1542. It is probable that he might have been as much as twenty-five years of age at the commencement of his medical career, which will carry the date of his birth to near 1520, about the time Hernando Cortez was preparing his expedition for the conquest of Mexico.

We have no record of the date of his death, but he was probably about sixty years old when he gave his interesting book to the world. Botalli had enjoyed great advantages in the means of his early education, and that he made a good use of them will appear to every reader who will observe the lucid order of his thoughts, the purity of his style, the various and extensive learning which everywhere distinguishes his productions, and witness the strict integrity, truthfulness, and honor that mark his whole course. No man in our ranks was more charitable to the poor, nor more open and undisguised in the expression of his convictions. In short, Leonard Botalli is a name that adds grace to our annals, and, though dead so long ago, he yet lives and speaks to us in a volume that is become a holy classic in medicine.

The entire tract is comprised in forty-two chapters, that occur in the following order, with their proper headings:—

Chap. I.—How the ancients employed blood-letting. The diseases in which they used it, and those in which they declined to use it. The nature of the blood.

How it is formed. In what way it is useful, and in what way useless in the body.

Chap. II.—Blood-letting, when required, is useful in the diseases of both children and aged people.

Chap. III.—Is blood-letting suitable in cases of pregnancy?

Chap. IV.—Venesection is adapted to fluxes from the vessels.

Chap. V.—Blood may be drawn in the commencement of exanthemata, in parotis, or other critical evacuations.

Chap. VI.—How blood should be taken in the treatment of actual menstruation, or during the lochia, in epistaxis, or other critical hemorrhages.

Chap. VII.—Is venesection useful in plague?

Chap. VIII.—Blood-letting necessary in cacochymia.

Chap. IX.—Whether bleeding is adapted to the treatment of flatulent pain.

Chap. X.—Bleeding necessary in the case of convulsions.

Chapter XI.—In epilepsy, suffocation, and other disorders of the kind, blood is to be drawn.

Chap. XII.—In catarrhs and obstinate pains, bleeding to be had recourse to.

Chap. XIII.—Phlebotomy to be used in dry cough.

Chap. XIV.—Venesection useful in pains in the abdomen.

Chap. XV.—Whether phlebotomy is suitable in dropsical persons and in inveterate quartans.

Chap. XVI.—Whether bleeding is adapted to recent quartans.

Chap. XVII.—Whether in fevers tending to tabes and emaciation blood-letting is an appropriate measure.

Chap. XVIII.—*Post superfluam venerem*, phlebotomy not to be avoided if the indication for its use exists.

Chap. XIX.—None but the ignorant hold blood-letting to be injurious to the sight, or that a first bleeding has greater powers of curing than a second, or a third, or a hundredth. The indications in venesection are—

Chap. XX.—Indications derived from the nature of the disorders;

Chap. XXI.—Indications from the part affected;

Chap. XXII.—Indications from the habits and movement of the disorder;

Chap. XXIII.—Indications from the season of the year.

Chap. XXIV.—Of the quantity of blood to be let in proportion to the strength.

Chap. XXV.—Of bleeding ad deliquium animi.

Chap. XXVI.—Explanation of the indications employed by Hippocrates and Galen in blood-letting.

Chap. XXVII.—Indications derived from the tint of the blood and its consistence.

Chap. XXVIII.—The opinion of the author as to the quantity of blood in the body, and how much may be taken, or spontaneously effused, without loss of life.

Chap. XXIX.—He shows us by numerous examples, as well out of Galen as from his own experience, how much blood may be drawn.

Chap. XXX.—By stating cases and their cure, he endeavors to show how much blood may be drawn.

Chap. XXXI.—Whether small and few blood-lettings are proper in long and obstinate disorders.

Chap. XXXII.—Objections of his adversaries refuted and explained.

Chap. XXXIII.—Shows by many instances how much blood is formed daily in the body.

Chap. XXXIV.—Repels the peurile notion of those who attribute greater usefulness to a first bleeding than to subsequent ones.

Chap. XXXV.—Whether the first blood that is formed is better than that subsequently produced.

Chap. XXXVI.—Physicians, both ancient and modern, have erred rather in deficient than in excessive use of bleeding.

Chap. XXXVII.—Whether bleeding should be performed before or after purging remedies have been employed. Whether phlebotomy may be used without regard to purging either before or after it.

Chap. XXXVIII.—What is to be attended to while bleeding the patient, and what is to be done in case of fainting?

Chap. XXXIX.—In performing the operation, what mode of opening the vessel is most in use?

Chap. XL.—What vein is preferably to be opened, in various diseases?

Chap. XLI.—Of arteriotomy.

Chap. XLII.—Of local bleeding.

Now it rests with the reader to cast his eyes over this series of headings to Botalli's chapters, which may serve at least to show, like the carte at a table d'hote, what is the bill of fare in his reach; but, as a physician retired from the busy scenes of practice and retaining only an affectionate interest in a profession to which more than a half a century was assiduously devoted, the writer could not repress a wish that every student of physic in America might be held to study Botalli's tract as a text-book, rather than the cold and formal tract of Celsus, which has been repeatedly preferred as a horn book for medical students.

It is the fashion of the day to put aside the old and standard authors in medicine in favor of the modern monographs, the bodies of physic, and that gallimatias of journalistic literature so pregnant of hope and promise while so barren as a substantial and refreshing fruit. Yet it is difficult to conceive that an honest and intelligent observer like our author should be sent to his grave to be forever after sneered at as a man whose words, whose efforts in behalf of the true and the good, deserve nothing but the contempt of the living. If a true and faithful heart did beat in man's breast, animating and developing a great and useful intelligence assiduously employed in the interests of mankind, there seems to me to be a cold and a base ingratitude in them who treat their memory with indifference or scorn; and I cannot suppress the feeling of disgust that arises when I hear a professional jackdaw glorifying himself because decked in the feathers of half-a-dozen text-books, he plumes himself upon the glorious nineteenth century—the age of telegrams and steam—but scarcely therefore the age of philosophy and common sense.

Botalli studied medicine both at Pavia and Padua, and had for his masters the most illustrious teachers of the time, as Cardan, Frigimelica, Lanfranc, Falloppio, Trincavelli, and other learned philosophers, who had stored him with that wisdom and knowledge which served as the seeds to a larger growth which sprung up in the service and at the courts of Louis IX., and of the Prince of Brabant and Flanders and Duke of Anjou. He appears to have passed his whole life amid the most brilliant society of the saloon and the camp, and to have thus attained to that elevation in his intellectual and moral sense that belongs to the very highest training. If such a man relates with candor and truthfulness the story of his experience as a physician, it is as worthy of acceptance and credence to-day as if it had to-day been uttered by some celebrity of London or Vienna, of Paris or Berlin. But our intention not being to set forth a special plea for Leonardo, let us turn to his book and allow him to speak to us from his own mouth, by citation of his own words, *de curatione per sanguinis missionem.*

The second chapter is devoted to the inquiry whether blood-letting is admissible as a remedy in the diseases of children and of aged people, a practice condemned by Galen, yet deemed by our author not only safe but useful in the incipient stage of violent disorder and where the patient is plethoric. In such case, an aged patient may suffer as much as one pound of blood to be drawn from the arm, to be repeated in the course of six hours by another bleeding to the amount of half a pound. In case such second bleeding should be determined on, it ought not to be done without having given some proper nourishment.

Botalli asserts that for an aged man not in good health, and affected with impurity of the blood, it is neither superfluous nor hazardous to lose blood by venesection from four to six times in the course of one year, and he has no hesitation in saying that the new productions of the vital fluid that take place most readily after hemorrhages constitute a real advantage to a man in years.

As to this notion of Botalli concerning newness of blood, it should be observed that the daily ration of a man is what is regularly required to make up for the daily waste of the old blood in acts of nutrition and of secretion, and that a man who has not been bled requires his three-quarter pounds of pork, or his pound of beef, and his quota of bread and beans, as regularly as if he had passed through the hands of the illustrious Sangrado himself. Nevertheless, there lurks, perhaps, in every physician's mind a latent idea, that the fresh newly-developed and diffluent blood that fills the vessels of one who has been exhausted by great losses from wounds or from fever is in fact more active and more useful; as if it had been drawn from some *fontaine de jouvence.*

In the third chapter, on the question whether bleeding is a suitable remedy in the cases of pregnant women, he quotes Celsus as an advocate of the practice, while he shows both Hippocrates and Galen to be in the opposition. So great was the authority of these two names, that the medical people of his day felt impelled by it to refuse blood-letting in pregnant women, even when laboring under the gravest and most acute disorders. It is in this connection, and to show how needless it is to be bound by a dogma, even when issued from the school of the father of medicine, that he relates the history of Lady Drury's case, which came under his care while in London, as one of the suite of the Duke of Anjou. This Prince of Brabant and Flanders and Duke of Anjou had gone to London with a view to solicit the hand of Queen Elizabeth, so that Leonardo was honored by being made acquainted with the sovereign, and by conversing with her relative to the illness of one of her favorite ladies of the court, the Lady Drury.

This occurred, he says, in "the course of the present month of June, at London." The Lady Drury was in the seventh month of her pregnancy, and was at the time suffering from an obstinate tertian fever, attended with most excruciating pains in the hypogastrium and the right hypochondrium, and with a nasty jaundice and a pressure downward of the fœtus toward the pelvis.

In the presence of the French Royal Duke, Queen Elizabeth, who was much attached to the Lady Drury, asked Botalli to visit the sick lady, saying she thought it possible that bleeding might be a proper remedy for the disorder, and requested him, if he should be of the same opinion, to persuade her at once to submit to the operation.

Botalli found her complaining grievously, and in addition to the symptom already mentioned, having very dense and inflamed urine, and immediate expectation of premature confinement. The patient was twenty-eight years old, and stated that she had been seized two months before with a simple tertian, which soon denegerated into a double tertian, and then became a continued fever, such as he actually saw it to be. The pain and sleeplessness were very great. She said that purgative medicines had been prescribed to her from which she felt no better, but worse; that the learned Dr. Bailey, physician to her majesty, (Qu. Walter Bailey?) had, at the commencement of the illness, spoken of bleeding her, but as he was in consultation at the time with another physician who dissented, it was not done, though the practitioner had agreed to yield to Bailey's superior authority. This disagreement of her medical attendants had alarmed her so that she would not agree to the operation at the time, after which the proposal was never renewed; that the doctors had at first thought of bleeding her, and Dr. Bailey, her majesty's physician in ordinary, was in favor of doing so, but seeing that the consultation were not unanimous on the subject, and inasmuch as it was commonly conceived to be dangerous to let blood from pregnant women, particularly at the seventh month, the operation had not been performed, because she was frightened about it on these accounts, and because Bailey having gone with the queen to Richmond, nothing more had been said about it in his absence. Botalli told her the only proper remedy now was venesection, both in her own interest and in the interest of her child; that if abortion should take place it would be not because she was bled, but because she was ill. To this opinion Lady Drury assented, saying that her mother, Lady Stafford, who was always in attendance on her majesty, had, by the queen's command, repeatedly desired that she should have it done. Botalli said, "In such a disease as yours, so serious, so obstinate, with such a habit of body, and so vitiated a state of the blood, it is most evident that blood-letting is demanded, but not excessive, nor for once only, but should be repeated several times in the course of several days; still, as Dr. Bailey and the other physician are now absent, nothing can be immediately done, especially as there is plenty of time yet for consultation." The consultation met in the evening, and after a conference, in which Bailey regretted that it had not been done earlier, he now feared it was too late to do any good, though he had no notion it could be injurious to the lady, though in case of the threatened abortion taking place, the doctors must inevitably be discredited, seeing the general opinion of society on this subject. The end of the meeting was an agreement, so that, the next day at nine in the morning, after a very bad night in which she did not sleep a wink until near morning, they drew away ten ounces from the basilic vein, scarcely one-eighth part of which appears to be blood, and that *perust*, covered with a thick coat of size, and all the rest serum. The pains were much lessened by the operation. At 2 P.M. the vein was again opened, and about six ounces taken which resembled the former portion. The fever was diminished, the bearing down was less, and everything looked favorable. Botalli advised that she should be bled again in two days, which, however, was not done because she seemed to be easier, to his regret; yet, when in the course of eight or ten days afterward the bleeding was reiterated, she felt so much relieved that she told him, smiling, how a physician, whose name she would not give, had called upon her, half an hour before Botalli's first visit, to say that, hearing Botalli was to see her with a design of letting her blood, etc., "*pietate ductus*," he had come to let her know how dangerous a thing it was, and how completely opposed to the best authority and practice, to take blood from pregnant women, and to warn her of the danger of being bled once, much more twice. So my Lady Drury dismissed him, with a refusal to allow him to be present at the consultation, though he was considered one of the most learned physicians in London. She told Botalli that she had kept this incident to herself, lest if she had informed him of it, he might, for fear of calumny, act with less independent judgment. Botalli here breaks out on the impudence of this doctor, and proves the steady good sense of his patient who had thus been preserved, and who assured him that hereafter she intended to resort to bleeding when sick, whether pregnant or not, and in spite of the maxims of the doctors.

The rest of this interesting chapter is taken up with accounts of and references to numerous cases in which he had used the lancet for women in gestation. He tells how that at Blois, being invited to supper by the Duchess of Nemours, that lady remarked that he (Botalli) had inspired the minds of ladies *enceinte* with courage, and had given to the physicians also no little confidence in the use of venesection; but a learned doctor who was at table observing that there was nothing new in the practice, the Duchess answered, "You may say what you will about your ancients, but the fact is that the general use of bleeding as a remedy in France these ten years past, and which is so much vituperated by many doctors, is due to Botalli;" and the Duke of Guise added that he had repeatedly said the same thing to the doctors, and Botalli insists that for fifteen years past he has promoted the employment of this great resource both by example and precept, both verbal and written.

It is not expedient here to follow the author in his argument in favor of the use of the lancet in the management of diseases of pregnant women, because, in the first place, such an exposition would be tiresome to the reader, and in the second place, because we presume there be but few American physicians of some twenty or thirty years' experience in the practice, who remain ignorant of the former custom in this country to bleed nearly every pregnant woman at least once by way of precaution, and as the safest and readiest of all prophylactics for the gravid. The same persons, probably, are as well aware as the present writer, that great inconveniences have followed the abandonment of so salutary a custom, since they cannot ignore the fact that most elaborate investigations have of late years been called for into the nature and causes of those renal and phlebitic affections that are now so rife and dangerous, and we add so fatal, because the new practice of delaying the use of venesection has invaded even this country, to the overthrow of those health-giving and life-preserving principles which, though they sprung not originally out of the fruitful and active brain of Leonard Botalli, yet were so plainly and so eloquently set forth by him that they were for two centuries enabled to triumph everywhere over the insane objections of the timid followers of Chrysippus and Erasistratus.

Relieved as we are from the practice of an art to which fifty-two laborious years had been sedulously devoted, and withdrawn from the scenes of active operation, we feel that we ought to be able dispassionately to review the long and wearisome track on which we so perseveringly toiled. Well, such a review compels us to declare that the practice of physic is by no means so efficient, so beneficent and conservative as it was in this country thirty or forty years ago; and we are firmly persuaded that the same thing is true of Europe—where medical men seem to have tumbled into the deep slough of the chemicalists, because they will believe the living body to be some sort of an alembic, in which life, function, even thought, is to be distilled, and the result to be modified by a *quantum suff.* of salt, sulphur, and mercury, phosphorus, arsenic, *et id genus omne.*

We may refer the reader to the close of this chapter for an account of the way in which Botalli's brother treated his two daughters, both of whom were *enceinte*, and suffering with acute fever and pains of the head and back. This gentleman, who seems to have been a hearty convert to the lancet doctrine, took away from each lady three pounds the first day, and as much on the second—abstracting on each occasion two pounds in the forenoon and one in the afternoon. By this method the ladies were completely cured on the fourth day, without the least damage to either mother or child.

Chap. iii. is devoted to the discussion of the influence of venesection in diarrhœa and dysentery. To show how favorably it acts in these disorders, he cites several cases at length in which he happily succeeded in curing people far gone in disease. He knew that dysentery was inflammation of the gut, and founded his practice on that idea.

Eruptive disorders and cystical tumors and evacuations are discussed in chapter v. with the same result of proving that abstraction of blood is one of the most useful and safe of methods; and in the sixth chapter he enters upon the question whether bleeding is allowable during the catamenia, in epistaxis, or in critical hemorrhoidal hemorrhages; all of which questions he examines with much discreet wisdom, and shows that the existence of any one of them is no bar to the indication, where that indication can be made out.

Botalli devotes his seventh chapter to the discussion of the question as to the treatment of plague by blood-letting; and he concludes that there is no form of that frightful disorder in which his great remedy is inapplicable, and that it is even superior to all others.

In the third section of this chapter he puts forth a statement of the opportunities he had enjoyed of learning what was the general opinion on this great subject. "If you ask," says he, "how I came to know all this, I answer that I know very well that the medical men from Galen downward, and all the physicians of my own day and acquaintance, whether my own teachers, or men of Pavia, Milan, Padua, and Venice, in France, England, Hanover, and Flanders, were all very sparing in blood-letting—rarely taking more than three vascula (nine ounces, or at most ten ounces) at one time;" and he shows that the bolder practice had been introduced and made known by his writings and by his brother's. This chapter on plague contains the history of Capluan's case, in which that individual was taken to Botalli's house and cured of a dreadful attack of plague, with vibices and buboes and abscesses, by the most audacious venesections. The case, however interesting, and however well calculated to set forth the safeness and advantage of bleeding in the case of plague, is too long for insertion in this place. Doubtless many persons, in perusing the curious relation of Capluan's case, would at once pronounce the doctor a madman and the patient a fool; yet it must be admitted that, if any medical writers can be relied on for veracity and science without exaggeration, Botalli is one of that class; and also that facts are stubborn things, that will not lie any more than mathematics will lie—which they cannot do, though mathematicians and doctors can.

Capluan lost by venesection, in his attack of plague, 136 ounces of blood at eight bleedings; and to that bold practice he, in a grateful letter to Botalli, attributes his escape from death. A second letter, of later date, states he is in perfect health; in it he observed, Botalli had no right to say that the doctors from Galen downward were timorous bleeders, for he had only to read the eighth chapter of Book I., Synopses of Oribasius, to see that that colleague was not afraid to bleed twice, or even thrice, in the same case, nor to carry the subtraction to the point of a deliquium animi. To read instances, cap. ii. and iii., *Collectiones*, lib. vii., will show him a sufficiently prompt bleeder, though an obedient servant of Galen as to the injunction against venesection in children under fourteen and in old people. In the third chapter, *de partita sang. missione*, he directs us to divide our bleedings so as to take the proper quantity for the cure of the disease in divided doses for patients who, though weak, may be esteemed to demand venesection as a remedy; while in the strong, and in early stages and acute disorders, he was a resolute bleeder. But we are not writing a retrospective review of Oribasius, who was physician in ordinary to Julian the apostate, and flourished in the closing years of the fourth century.

Chapter viii. treats of cacochymia and its cure by the remedy. Chap. ix., Is venesection a suitable remedy in flatulent colic? Chap. x., Convulsions to be treated by blood-letting. Chap. xi., In epilepsy, and in strangulation, etc. Chap. xii., In catarrhs and obstinate pains. Chap. xiii., In dry cough. Chap. xiv., In pains of the belly. Chap. xv., In dropsies and inveterate quartans; and on this point he speaks feelingly, because he had recovered his own health ten years before, when in great danger from a dropsy that was brought on by a quartan ague. His good fortune was due to his having been, at short intervals, three times bled, to the amount of from one pound to ten ounces; and this step he took at the earnest solicitation of his brother, who seems to have been as characteristic a Sangrado as Botalli himself.

Chap. xvi. treats of the applicability of the remedy in recent quinsy, and gives cases to show the good results. Going now forward a chapter, we find him discussing the question whether blood-letting is injurious to the sight. In support of his views, he cites the case of the Cardinal de Biragua, who was keeper of the seals for Charles IX. in 1570 at Paris. He was one of the formers of the plot for the St. Barthelemy, cardinal in 1578, at the instance of Henry III. † 1583. This man's health and sight were greatly strengthened by the repeated bleedings prescribed by Botalli. But our author, having a serious affection of the sight, bled himself enormously, and perfectly recovered from the disorder.

The twenty-fourth chapter treats of the quantity of blood to be drawn, *pro ratione virium*, and the twenty-fifth of bleeding *ad deliquium*. The twenty-seventh chapter shows that a good indication as to the quantity to be drawn may be taken in the tint of the stream as it flows away; but he is very careful to insist that the color of the flowing stream is not solely to be depended on, and we ought to judge of the case by inspection after the basin has rested awhile; and the judgment to be formed of the quality of the blood will depend upon the form of the vessel into which it is received—if in a shallow and wide dish, it will cool and coagulate so rapidly that we shall not be able to discover the various parts of its constitution—everything being compressed and compacted. But if the stream is received in a deep and narrow cup, it will coagulate more slowly, and thus give time for the more complete separation and disintegration of its several constituents.

Chap. xxviii. treats of the quantity of blood that is contained in an adult human being, and at page 272 he cites the opinion of Avicenna, that the sum total amounts to twenty-five pounds, of which experience shows that seventeen pounds may be lost in the course of a single day, from wounds or other causes, without necessarily causing the death of the patient. [This day is April sixteenth, and yesterday I saw Mrs. ——— at Philadelphia, who had just recovered from her menstrua. She told me that she had used six napkins a day for seven days, large ones, which yet were not sufficient to prevent an overflow on to her feet. Now here are

40 or 42 napkins, each of which would hold not less than 6 drachms = 240 = 30 ounces. Very well; but this lady would make water at least 5 times a day, and never without a considerable quantity of the fluid that is always being collected within the vagina, restrained by the sphincter vaginæ, and which must be assumed to = 35 times 1 ounce, or 35, which, + 30 ounces, ut supra, = 65 ounces lost in this menorrhagia, and which, to all appearance, had not in the least affected her pulse, her color, or her strength; and this is a case that I have witnessed a hundred times; so that I do positively know that a woman may lose fifty or sixty ounces of blood in a menorrhagia without sensibly interfering with her health and security.] Leonardo goes on to express some surprise at Avicenna's statement, because, as he thinks, there are few people who could bear the loss of ten pounds at one draught and live, though he has seen some persons lose ten pounds in the course of a single day without loss of life, and many he has known to lose twenty pounds in the course of one week. It is easier, says he, to lose thirty pounds in the course of eight days, provided the strength is meanwhile supported by proper food, than for the strongest man to lose ten pounds in a single day without in the mean time taking any nourishment to keep up his strength.

Our author devotes the twenty-ninth chapter to an inquiry concerning the quantity of blood that may be taken away by venesection, with examples out of Galen's experience and his own; and that he was not at all attacked with what he calls hæmaphobia, one can see by reading the closing section of this chapter. This subject is continued in his thirtieth chapter, wherein he relates the practice of his brother, Francis Botalli, a surgeon, who appears to be quite as much *Sangrado* as Leonardo himself. It is curious to see how audaciously Francis bled his young daughter, whom he spared no more than he spared other folks; for it was his way, *sæpissime libras quatuor et quinque cum maxima ægrotantium utilitate detraxisse*, p. 284.

Francis had a daughter seventeen years old, who, being seized in the dog-days with an ardent fever, at a time when the plague was prevailing in the country, was bled on the third day of the disease to the amount of thirty-two ounces. He took another pound in the afternoon. On the following day, seeing that the disease was aggravated in violence and accompanied with intense headache, he drew off another pound; and on the succeeding day, the disease still holding its violent course, so that he almost despaired of her life, he anxiously doubted whether he might venture to bleed her again. At length he acquired confidence to that degree that he bled her to the amount of one pound, which gave her a good night and freed her from the disorder. It happened, says Francis, that two hours after this last operation, she fainted so badly as to greatly alarm him; but when he had given her some good meat broth and yelk of eggs, the weakness disappeared and she was perfectly restored.

In the thirtieth chapter the author says: "We have shown, with sufficient clearness, that most physicians have erred in letting blood both too late in the disease, and in quantity too small, and we shall now proceed to inquire whether they have, on the contrary, erred by any excesses." He considers that in general they bleed too sparingly, though some of the followers of Erasistratus and Thessalus, after being converted from their sectarian views, were accused of having destroyed people by the extravagant use of the lancet. Hippocrates was not the inventor but only a follower in a practice that long preceded his epoch, and was, so to speak, a timid bleeder. It was to the influence of Chrysippus and Erasistratus that was due the almost entire cessation of the use of venesection in medical practice, until Galen, by his example and writing, reinstalled it as a method of curing diseases.

Botalli makes a considerable mistake in stating that whereas the practitioners of physic who adopted the fears and objections of Erasistratus were prevented by their deference to his great authority, down as low as the era of Galen, and though that illustrious physician not only defended the views of Hippocrates, but absolutely resuscitated and restored to life and activity the use of venesection, that had, for so many years, been completely dead and buried by Chrysippus and Erasistratus, yet even after him the habit of obedience and a still lingering hæmaphobia prevented the successors and even the admirers of the Pergamenian from bleeding freely and boldly in their practice. We say he made a mistake here, because it is certain that Oribasius, who was archiater to Julian the apostate, and who was induced, by the request of that emperor, to draw up and publish his great works on medicine, was a bleeder of the boldest sort, as the reader may learn in both his books of Synopses and in his Collections, in the 4th chap. and 7th book of which he recommends venesection to the amount of ten ounces, to be followed soon, if requisite, by another abstraction to half that amount, which agrees well with the ideas of most moderate men of the present day. He says that many physicians refrain from venesection to a proper extent, out of fear, not of the evil consequences that might ensue to the patient, but to themselves, on account of the public sentiment, which was mainly in opposition to liberal detraction of blood in the sick; but he assuredly believes that 100,000 persons are permitted to die of diseases from want of early and sufficient blood-letting, to a single individual who might perish from excess of it.

It would be calling too freely upon the reader were we here to lay before him a considerable series of the very interesting and well drawn up cases with which the book is replete. Perhaps it will be deemed that we have already dwelt too long upon the notions of a doctor who died not less, probably, than two hundred and seventy years ago. But to peruse the pages of so excellent a physician and so worthy a gentleman is a thing impossible for us, without being convinced that he is one of our best teachers and guides in practice. Very lately we read again, perhaps for the twentieth time, the cruel satire on blood-letting by Le Sage, contained in his account of Gil Blas's connection with Dr. Sangrado and the licentiate Sedillo of Valladolid.

Yet a satire may be more bitter than gall or wormwood, though the subject of it be pure as light and sweeter than the honey-comb, and while it is impossible to suppress a smile at the picture of Sangrado's practice, we are not a whit the less inclined to smile when we think of those who at the present day are as much hæmophobic as the sectarian Chrysippus, and who reason on blood-letting as if the daily incidents and events of a medical man's life did not bring often before his eyes the evidences and the proofs that men and women may suffer enormous losses of blood, and by a long and healthful subsequent life show that such hemorrhages, as the artificial or spontaneous, are safer as remedial agents than the potent drugs and medicines that with the utmost complacency are prescribed and taken, with a view to bring about some mysterious chemical result under which the crasis not of the blood only, but the whole living solids, is to be restored to a true physiological normality.

Our own opinion on the subject coincides with that of good old Dr. Daniel Le Clerc, author of the History of Medicine; and here is where he says, that—

> "Having gone over the ground covered by what is properly called the first age of medicine, it would seem that but little can be gleaned out of all that old time of really practical and useful medicine: all is fabulous and uncertain, or at least extremely confused; nevertheless, if medicine consists rather in its effects than in its doctrines, and if the discovery of remedies is more important than any reasonings whatsoever concerning diseases, we shall be obliged to admit that those old time peeple were acquainted with nearly everything deemed really essential to be known by modern physicians throughout Europe; that they employed nearly all the fundamental remedies, such as are most relied on at the present day. All physicians, with a very few exceptions, look upon bleeding and purging as the most universal of remedies."

We are not of the class of those who abhor venesection, and who reason upon artificial loss of blood as a real attack upon the vital principle, as was the idea of some of the ancients. The practice of physic is not improved by this change. Many a valuable life is placed in peril by the new fashion of oh-oh-ing and pooh-pooh ing the shocking hint that a vein might perhaps be with advantage breathed.

As a dispassionate, and now disinterested spectator of the scenes of medical practice, we look with regret upon the present disfavor of a remedy that has received the sanction of mankind for innumerable ages, and which, though under some mysterious and unknown influence, now nearly banished from the world, must inevitably again rise into favor among men, and again serve as one of the strongest of the few feeble barriers we are able to raise against the assaults of pain and the threatening approaches of death.

ART. III.—*A Practical Treatise on Phthisis Pulmonalis, embracing its Pathology, Causes, Symptoms and Treatment.* By L. M. LAWSON, M.D., Prof. of Clinical Medicine in the University of Louisiana; Visiting Physician to the New Orleans Charity Hospital; formerly Professor of the Theory and Practice of Medicine in the Medical College of Ohio. 1 vol., 8vo., pp. 560. Cincinnati: Rickey, Mallory & Co.

A NEW work on phthisis pulmonalis, at the present time, may seem to be uncalled for. Already a large number of able treatises on the subject are before the profession; indeed, so much has been written, and so little ascertained as to the true nature of its cause and its successful treatment, that it is difficult for any new candidate for public favor to obtain a patient and unbiased hearing. In the work before us, Dr. Lawson, although he presents some new and interesting views, and has done much toward placing the whole subject on a more scientific basis, does not claim to have demonstrated any new fact; nor does he suggest any novelty as to its treatment, which, of itself, is calculated to inspire us with new hope or to give a distinctive character to his book; and yet we think no one can rise from its perusal without being thoroughly convinced that we needed just such a book. In the general plan of the work; in the thorough, careful, and logical analysis of all known facts; in the fullness, clearness, and discriminating character of the diagnostic principles; in the systematic description of the precursory stage of the disease; in its valuable statistical tables; and in the judicious application of the treatment as applied to the different stages of the disease, it is doubtless greatly in advance of any work of the kind that has ever been offered to the profession.

The first thing that favorably impresses the reader, in opening Dr. Lawson's book, is its admirable arrangement. It is divided into four general parts, and these are subdivided into chapters and sections, a full and complete index being appended to each, so that the reader can, at a glance, see the general scope of the work, and turn to any subject which he may desire.

Part first embraces the Pathology of Phthisis. This is divided into chapters, including a full discussion of the tuberculous constitution, of the precursory stage of phthisis, of tuberculous deposits, the condition of the blood, the state of the secretions, the deposit of tubercle, changes which occur in tubercular deposits, changes consequent upon softening and elimination of tubercle, distribution of tubercle, secondary and intercurrent lesions, tertiary lesions, forms or varieties of phthisis, and the general nature of phthisis.

Part second embraces the Etiology of Phthisis, including the discussion, in separate chapters, of the general predisposition to phthisis, of the causes which may induce phthisis independent of hereditary predisposition, such as climate, temperature, humidity, altitude, atmospheric impurities, temperaments, age, sex, occupation, ingesta, &c.; and of pathological inducing causes.

Part third embraces the Semeiology of Phthisis.

Part fourth the Therapeutics of Phthisis.

In the chapter on the general nature of phthisis the author examines, at length, all the more popular and captivating theories of tuberculosis. The subject of impaired primary digestion, imperfect development of chyle, morbid condition of lymph, defective respiration, morbid states of the blood, specific poison, retrograde morphology, inflammation, etc., are all clearly presented, and the arguments for and against fairly and candidly considered. Dr. Lawson devotes a large portion of this chapter to the refutation of the popularly received view which refers phthisis to errors of *primary digestion.* From the *gastric* origin of the disease he entirely dissents; and after stating his objection to this, and many of the commonly received opinions—indeed all of them—he arrives at the conclusion that there is but one remaining source to which we can look, namely, the *metamorphosis of the tissues.*

> "Taking all these facts into consideration," says Dr. Lawson, "I am led to conclude that tubercle is almost of necessity the product of the metamorphosis of the tissues. It is here, and here alone, that we find those important changes taking place which result in new combinations, chemical and organic, and which, passing into the blood, lead to local disease. This may be termed a *diathesis* when it is a result of a peculiar constitutional conformation, which, by its own natural tendency, eventuates in a specific form of disease."

Mere blood-changes are not regarded as sufficient to constitute either the tuberculous condition or the local deposits; and analysis has failed to point out the elements of tuberculous matter in the blood. But on the supposition that the elements of tubercle are formed in the metamorphosis of the tissues, and that these elements, seeking elimination through particular tissues, become deposited or arrested, with all the attending phenomena of tubercle, all difficulties, in the estimation of our author, are removed, and "the subject assumes a clearer and more philosophical aspect." Corroborative evidence of the correctness of these views is also deduced from the irritation of the lymphatic system, which is often present in the tuberculous diathesis. The identity or close similarity of scrofula and phthisis also receives a passing notice.

> "In examples of *tuberculosis*, the morbid element enters the venous radicals, passes into the general circulation, and reaches the lungs and other tissues; in *scrofulosis*, the irritant enters the lymphatics, affects the glands, and gives rise to all the signs of that disease. To what extent these two conditions may act reciprocally, or how far the predominance of one may suspend or modify the other, are important but undecided questions; but there are some facts which indicate that a decided impression produced on one system affords some relief to the other; and thus scrofula often exists without turberculosis, and *vice versa*. It is not improbable, indeed, that if the morbid element takes the course of the external lymphatics, the internal structures may escape, and thus these vessels, acting as a diverticulum to the lungs, actually afford a protection to those organs."

No explanation is attempted of the law by which, in one instance, the morbid element enters the lymphatics and develops external scrofula, while, in another, it passes into the general circulation, and finally involves the lungs. Nor does the want of explanation alone furnish a valid argument against the views here presented; for as strong, or even stronger objections may be offered to any other theory of tuberculosis.

Finally, after an elaborate discussion of the pathology of phthisis, in which all the prominent and popular theories are carefully reviewed, Dr. Lawson seems to think the following conclusions are fairly deducible from the facts which he has collected:—

> "1. The tuberculous element originates in the metamorphosis of the tissues.
>
> "2. It seeks elimination through the lungs, and may continue to pass, in certain quantities, for an indefinite period, without inducing local deposits.
>
> "3. When the morbid element reaches a certain degree of concentration, or when, by long-continued action, it produces a morbid effect on the lungs, local deposits take place.
>
> "4. The first deposit is the elementary morbid substance known as the amorphous stroma; this is followed by the development of molecular granules and peculiar cells, which constitute tubercle.
>
> "5. After the existence of solid tubercle for a given period, it softens, and the debris seeks elimination through the bronchial tubes.
>
> "6. The morbid action extends to the adjacent tissues, causes inflammation, softening, and disintegration, too often resulting in fatal disorganization.
>
> "7. The perfect uniformity of tubercle throughout the body, in whatever tissue or organ deposited, exhibits strong evidence of the specific character of the

disease, and that it could not originate from the ordinary derangements of nutrition.

> "8. The chemical and histological character of tubercle favor the opinion that the whole process is specific in origin and development."

In the second general division of the work, embracing the ETIOLOGY of PHTHISIS, there is an exceedingly interesting chapter on what the author terms "the geography of phthisis," by which he means to indicate the natural prevalence of the disease among the permanent inhabitants of a given district of country. The statistical tables, carefully elaborated from the United States Census, showing the relative prevalence of phthisis in the different parts of the United States, comprise the fullest and most complete collection of facts on the subject that has ever been presented to the profession of this country; and, if the work had no other merits, this alone should entitle it to a place in every American medical library.

The opinion which has long prevailed that climate exercises an influence over phthisis, is amply confirmed by Dr. Lawson. Two facts are regarded as established so far as temperature is concerned, namely, that the extremes of heat and cold are conditions unfavorable to its production; hence, *cæteris paribus*, the arctic and tropical regions are most exempt from phthisis; while, on the contrary, the disease prevails to the greatest extent in the so-called temperate latitudes. In Lapland, consumption is said to be a rare affection, and in Great Britain and Ireland it is much more common than in Russia. Some very interesting facts are presented as to the prevalence of phthisis in the arctic regions, in Europe, Asia, India, Africa, and the West Indies. But to the American reader, the most interesting feature of the work is the extensive collation of facts as to the prevalence of consumption in the different regions of the United States. The statistics are mainly drawn from the United States Census Reports, Army Reports, Drake's Diseases of the Interior Valley, Blodget's Climatology, and reports of local authorities; and the profession are indebted to Dr. Lawson for the finest collection of statistical information on this subject that has ever been presented in this country.

The main fact developed by these statistics is, that phthisis, in the United States, progressively decreases from North to South. While it is freely admitted that the facts upon which this opinion is based cannot be regarded as more than approximative, they nevertheless furnish sufficient data, in the author's judgment, to warrant the general conclusion at which he arrives.

> "I am fully persuaded that consumption originates far less commonly in the Southern than in the more Northern regions, and that it gradually but perceptibly diminishes from Maine to Florida; and, without claiming absolute accuracy, I believe the tables compiled from the United States Census are very near the

truth, and will be found sufficient guides for practical purposes. Thus, the mortality from phthisis in the eastern division may be set down at one in three hundred and twenty-eight; in the middle division, one in five hundred and nineteen; in the western division, one in eight hundred and eighty-two; and in the southern division, one in twelve hundred and eighty-seven. This shows the mortality from phthisis to be three times greater in the northern than in the southern division."

And he adds:—

"Another fact has been brought to light by these statistics which, probably, had not been generally anticipated, namely, that the mortality from inflammatory diseases of the chest, mainly pneumonia, is much greater at the South than at the North. Thus, we find the mortality from diseases of the respiratory organs in the eastern division, one in fourteen hundred and fourteen; in the middle division, one in two thousand four hundred and twenty-eight; in the western division, one in twelve hundred and forty-eight; and in the southern division, one in eight hundred and sixty-five."

Some ingenious speculations are offered in explanation of the effects of heat and cold in their relation to phthisis. In the cold atmosphere of the arctic regions a larger proportion of oxygen is consumed. In hot climates, on the contrary, the quantity of oxygen is relatively diminished, the blood is not so thoroughly decarbonized, the tissues break up slowly, and tubercular matter is not formed. In high northern latitudes, while a larger quantity of oxygen is consumed, the diminished temperature necessarily retards the organic movements. In addition to this, the inhabitants during the cold season take little exercise and live on highly carbonaceous articles of food; hence the diminished oxidation and consequent diminished metamorphosis of the tissues.

"It seems a fair inference, that the influences of heat and cold in protecting the system against the tubercular diathesis operate by virtue of the diminished transformations of the tissues, depending, in one case, on the protective agency of carbon, and in the other, on the depressing effects of cold. In either case the metamorphosis of the tissues becomes comparatively slow, and the tuberculous material scantily supplied."

Another distinctive character of the work before us consists in the systematic description of the *precursory stage* of phthisis. Dr. Lawson lays great stress upon this point. That the disease may be detected, even in its forming stage, he thinks can be fully demonstrated. In this stage he relies, mainly, on the general or rational symptoms: it is only in the more advanced stages that we have the more marked and prominent symptoms, and then, as justly remarked by the author, we accomplish little more than discover an incurable affection.

The precursory stage is described as "intermediate between the mere diathesis on the one hand, and the development of solid tubercles in the lungs on the other." In this stage, according to Dr. Lawson, the vital powers become impaired, the general strength diminishes, there is gradual loss of weight, irregular chills, followed by slight febricula, debility of the heart, arteries, and capillaries, irregular and morbid excitability, and a peculiar morbid condition of the mucous membrane and glandular structures of the fauces and larynx, which very constantly precedes the pulmonary affection. Much importance is attached to this latter symptom, although it is not regarded in the light of a cause, but as a mere local expression of a constitutional predisposition.

Numerous cases have come under the author's observation in which copious hemorrhage has occurred during the precursory tubercular stage.

Can this precursory stage be detected by *physical signs?* Dr. Lawson answers emphatically in the affirmative. In the first place, the condition of the chest appears to be one of debility of the moving powers of the parietes, and, as a consequence, there is limited expansion, *extending equally to both sides.* Expansion is comparatively small, and the movement proportionally less at the apex than the base; but full inspiration restores, almost perfectly, the harmony of the movement. After tubercles have been deposited the expansion of the apex cannot be restored, even by forcible inspiration; nor is the action that of a gradual swelling from below upward, as in the precursory stage.

In consequence of diminished mobility of the thorax, the sound elicited by percussion is less clear than that of the physiological type, and is equal on the two sides; but forcible inspiration will either absolutely remove or greatly reduce this dullness.

Auscultation develops weak respiratory murmur and jerking inspiration.

> "Finally," says Dr. Lawson, "my observation has taught me to believe that the precursory stage of phthisis may be readily recognized; that it has well-marked constitutional symptoms and clearly-defined physical signs. The constitutional symptoms embrace loss of weight, irregular chills, febricula, variable appetite; while the local signs include faucial and laryngeal derangements, cough, hæmoptysis, diminished expansion of the chest, weak and jerking respiratory murmur. These symptoms, occurring in a constitution predisposed to phthisis, can admit of little doubt or misconstruction."

Space will not allow us to present an extended synopsis of the *Therapeutics of Phthisis*, as given by the author, which, after all, is the best part of the book. We have no work on the subject, which, in our judgment, is so full in its details of treatment, or in which the principles of treatment are applied to the different stages of the disease with such just discrimination. And especially is this true of the treatment of the *precursory* stage.

The chapter on *Change of Climate*, in its relations to the different stages of consumption, is a most valuable contribution to our literature on that subject. It may be safely affirmed that we have no other work which presents this subject in so rational, clear, and philosophical light.

The author closes the subject of treatment with the following paragraph:—

> "But unfortunately a large, perhaps the larger number, at least in this country, do not seek reliable aid until they have passed the period of cure, or even of palliation. Our country abounds with designing charlatans, who falsely proclaim their ability to cure consumption with certainty and facility; and the press teems with alluring advertisements and inspiring certificates, proclaiming the discovery of specifics, before whose magic power disease recedes, as the night before the rising sun. And pale victims crowd these halls of false promises and heartless deceptions, eagerly grasping the gilded bubbles; but, alas! the dream is not realized, and the deluded victim finds relief in his narrow house, while the heartless mountebank goes on dispensing false promises, and reaping a golden harvest."

We have aimed, in this hurried review, to present, as compactly as possible, some of the peculiarities of Dr. Lawson's work rather than to give an extended review. It is a work of substantial merit, and reflects great credit on American authorship. In its admirable arrangement, clearness of style, and close and logical analysis of all known facts pertaining to the subject of which it treats, it is a model book, and should be in every library.

ART. IV.—*Course of Lectures on the Physiology and Pathology of the Central Nervous System.* Delivered at the Royal College of Surgeons of England, in May, 1858, by C. E. BROWN-SÉQUARD, M.D., F.R.S, etc., etc. pp. 276. Philadelphia: J. B. Lippincott and Co., 1860.

THE immense progress made by the physiology of the last fifty years is in no one respect better exhibited than in its conquests over many of the difficulties with which nature has environed the study of the laws of the nervous system. In this embarrassing pursuit, where chemistry has lent no aid, where the physics of the outer world has given no help, progress has been at all times slow, and the bones of dead and hasty theories lie thick upon the way.

Not the less surely has the general result been a gradual advance in the assured knowledge of important facts. Thus, while our conceptions as to the real nature of nerve force have advanced but little in the last thirty years, our more legitimate and hopeful efforts to study the laws which govern its manifestations in various portions of the nervous system have been as satisfactory as the nature of the subject should allow us to look for. Whenever, indeed, nerve trunks and nerve centres were sufficiently isolated to admit of careful and distinct examination without risk to neighboring organs, the methods of modern research have been amply rewarded; while, on the other hand, the nerve centres which lie closely grouped together have given but obscure answers to the questioning of the vivisector and pathologist. While thus we have had, comparatively speaking, but little difficulty in determining the functions of nerve trunks, and even of certain nerve centres, the physiology of most of the groups of gray matter in the encephalon has hitherto baffled the biologist in his efforts at minute functional definition, and even the group of spinal centres, with its connective and covering strands of white neurine, has never yet been satisfactorily explored, although its position and relations seem to offer facilities which disappear when we attempt to investigate the complicated mechanism of the upper ganglia.

Since the time of Sir Charles Bell, no physiologist has done more distinct service to the cause of spinal neurology than the author whose name stands at the head of this article, while in numerous other branches of physiology he has also rendered material aid.

In offering our readers an analysis of the volume before us, it is not our intention to criticise its results. The author is one who has given to his work many years of labor. He is acknowledged to be among the most cautious and careful of experimentalists, and, whether in the conduct of his researches, in the care with which he examines the results of vivisections, or in the industry with which he collects pathological and other illustrations of his views, he is unsurpassed by any of the biologists of the day. In one particular also the present volume, and indeed all of his writings, are deserving of praise which can scarcely be accorded on like grounds to some of his contemporaries. Every statement and every experiment not distinctly his own is fairly referred to its author, so that we learn precisely to what extent he presumes his own experiments in any particular case to have advanced the subject beyond the current knowledge of the day. The most remarkable contrast to this honest style of treating subjects is to be met with in the various courses of lectures which M. Bernard has published within the last few years. In all of these there is of course much that is purely original, but so much that is not so is stated as though it were, that a tyro might presume the author to have discovered and illustrated every known law of physiology. Now it is not credible that such an impression or anything like such an impression is what M. Bernard desires to produce; but this only is sure, that no one, however learned in physiology, can read his lectures without continually feeling this defect. Nor is this deficiency confined to the works of biologists so eminent as M. Bernard; it has crept in worse form into the pages of one of our popular writers whose volumes convey to the unprofessional reader an idea of originality in biological research which is altogether undeserved.*

We have said, before thus digressing, that we did not intend to criticise the statements of M. Brown-Séquard. In examining the views of a physician writing on any of our ordinary maladies, every one has the warrant of some individual experience, and thus far is on even ground with him whom he criticises; but where the author treads new fields of research, and guides his steps by means which are unfamiliar, those only who have followed his steps with care are fitted to scrutinize the conduct of his journey.

All that we can do now is to report his opinions and wait until the experimental physiologists of our time have practically examined the foundations on which these views repose.

The present volume contains the result of twenty years of eager labor, and is divided into twelve lectures and an appendix.

Lecture I. defends Sir C. Bell's theory of the existence of two distinct sets of nervous conductors—the sensitive and the motor—and discusses the nature of the so-called recurrent sensibility of the anterior nerve roots, which the author thinks is merely the pain caused by the spasms of such muscles as are thrown into violent action when the anterior or motor roots are irritated. Lecture II. shows that the transmission of the sensitive impressions in the spinal cord takes place chiefly in its central part or in the gray matter. Two important facts are relied upon to support this proposition, namely, that a transverse section of the posterior white columns of the cord causes hyperæsthesia and not loss of sensibility, and that section of the whole cord, except the posterior column, is followed by complete anæsthesia. Lecture III. defends the author's well-known discovery of the decussation of the sensitive fibres in the whole length of the cord.

Lecture IV. still further discusses various questions relating to the transmission of sensitive impressions, and of the orders of the will to muscles, through the spinal cord and medulla oblongata. In this section numerous experiments are related to show that the various sensitive impressions of touch, pain, temperature, muscular contraction, etc. are transmitted by distinct conductors, which all decussate laterally in the cord, and which are so arranged that a large part of the cord, both white and gray, is engaged in carrying sensitive impressions; the conductors from any one part being so distributed in the spine that only very deep injuries can wholly destroy the sensation of a part. According to our author it is much more difficult to determine what are the parts of the cord employed in voluntary action, than to find out what are those through which sensitive impressions are forwarded. He finally arrives at the conclusion that in the dorsal region the various parts of the spinal cord, except the posterior columns, seem to be employed in the conveyance of the orders of the will to muscles; and that in the upper part of the cervical region of the cord, near the medulla oblongata, most of the conductors of the orders of the will to muscles are in the lateral columns and in the gray matter between these and the anterior columns. The volitional fibres decussate at the anterior pyramids, and there only.

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* Lewes's Physiology of Common Life.

In Lectures V., VI., VII., and VIII., M. Brown-Séquard quotes and analyzes a large number of cases bearing upon his views of spinal physiology. At p. 136 he thus sums up the chief symptoms which indicate disease of the spinal cord:—

"1st. *Deep alterations of the posterior columns in all their length.*—Increased sensibility in the trunk and limbs for impressions of touch, or to pricking, pinching, and galvanic excitations, and for changes of temperature, (cold and heat;) loss, or a very great diminution of reflex movements; all kinds of voluntary movements possible, and more or less easily executed when the patient is in bed; walking and standing very difficult.

"2d. *Deep alterations of the posterior columns in the extent of the cervico-bronchial swelling.*—Increased sensibility in the four limbs and in the trunk, for all kinds of impressions; diminution of reflex actions in the upper limbs, and increased reflex actions in the lower limbs; some difficulty in the direction of the movements of the upper limbs, without the help of the sight; standing and walking possible without any great difficulty.

"3d. *Deep alterations of the posterior columns in the extent of the dorso-lumbar swelling.*—Increased sensibility in the lower limbs and normal sensibility in the upper ones; diminution or loss of reflex actions in the lower limbs; movements of lower limbs possible, and even easy, when the patient is in bed; but walking and standing very difficult.

"4th. *Deep alteration of a very limited portion of the posterior columns.*—Increased sensibility and increased reflex action in all parts receiving their nerves from the spinal cord below the alteration; voluntary movements possible, and even easy, everywhere; the place of the alteration may be detected by diminution of reflex actions in the zone round the body receiving nerves from the level of the part altered in the posterior columns.

"5th. *Alteration of the posterior columns and posterior roots of the spinal nerves.*—Instead of hyperæsthesia, as in the preceding cases, diminution, or loss of all kinds of sensibility, in places receiving the spinal nerves, which are the continuation of the altered roots; voluntary movements still possible in bed, and while the patient looks at his limbs, but walking and standing almost impossible; reflex actions *completely* lost in all the anæsthetic parts; if the alterations are in the upper part of the spinal cord, the other parts being healthy, their voluntary movements in the lower limbs, and even walking or standing, are possible, and may be easy, and these limbs have an increased sensibility and increased reflex actions.

"6th. *Alteration of the posterior columns and of the gray matter in all their length.*—There is no difference between this case and the preceding, except that here there is a real paralysis of voluntary movements, which is complete if the alteration extends to the anterior gray cornua; greater frequency of formication and of other sensations referred to the periphery.

"7th. *Alteration of the posterior columns and gray matter in any limited part of the spinal cord.*—Very nearly complete loss of sensibility; degrees of paralysis of voluntary movements varying with the place occupied by the alteration in the length of the spinal cord; reflex actions increased in parts receiving their nerves from the portions of the cord below the seat of the alteration.

"8th. *Alteration limited to the gray matter.*—The same symptoms as in the preceding cases, except that at first there is a greater degree of anæsthesia than of paralysis, if the alteration begins in the very centre of the cord. Formication and other sensations referred to the periphery in cases of inflammation.

"9th. *Alteration of the anterior columns in the upper part of the cervical region.*—No paralysis; anæsthesia; very slight hyperæsthesia; various sensations (particular pain) referred to several parts of the body.

"10th. *Alteration of the lateral columns in the upper part of the cervical region.*—Paralysis of voluntary movements in the four limbs and the trunk; increased sensibility and greatly increased reflex actions in the paralyzed parts.

"11th. *Alteration of the anterior columns in any part of their length, except the neighborhood of the medulla oblongata.*—More or less complete paralysis of voluntary movements in all the parts receiving their nerves from or below the parts of the cord where the alteration exists; slight hyperæsthesia; reflex actions very much diminished in the parts which receive their nerves from the altered portion of the cord, and increased below these parts.

"12th. *Alteration of the lateral columns in any part of their length, except the neighborhood of the medulla oblongata.*—Incomplete paralysis of movements; hyperæsthesia; diminution of reflex actions less than in the preceding case.

"13th. *Alteration of the anterior half of the spinal cord, including the anterior columns, a good part of the gray matter, and a part of the lateral columns.*—Voluntary movements completely paralyzed; sensibility very much diminished. For reflex actions, as in 11th.

"14th. *Alteration of the various parts of the spinal cord, except the posterior columns.*—Loss of voluntary movements and of all kinds of sensibility; reflex actions increased or diminished in certain parts of the body, according to the place of the alteration in the length of the spinal cord."

Lecture IX. is devoted to the consideration of the sympathetic nervous system. The author establishes the facts that section of the cervical branch of this nerve causes dilatation of the blood-vessels of the corresponding side of the head, afflux of blood, and increase of vital properties, while galvanization of the cut extremity (the upper end) produces the reverse effects. M. Brown-Séquard states that the cervical and the cerebral sympathetic originates from the spinal cord as low as the tenth dorsal vertebra, Waller and Budge having placed the organic higher up, between the sixth cervical and fourth dorsal. He is also of opinion that the vaso-motor nerves of the lower part of the body come chiefly from the cerebro-spinal centres, as we think he has shown from the effect of sections of the dorsal and lumbar cord. The first experiment which links these physiological results to pathology and enables us to assert that reflex impressions may cause dilatation and contraction of vessels through their vaso-motor nerves, thus imitating the influence of section and galvanization of the sympathetic, is the well-known one of Dr. Tholozan, who showed that when the hand is placed in cold water, the blood-vessels of the other hand contract. The author next shows that section of a lateral half of the spine causes paralysis of the vessels of the limb on that side, and contraction of those on the other. Spasm of the capillaries is therefore to be regarded as a possible pathological incident, and starting thus, our author proceeds to apply this knowledge to explain certain cases of coldness in the limbs, some forms of gangrene, and other symptoms noticed in cholera and ague.

Lecture X. is perhaps one of the most valuable in the volume to the physician, although it contains least that is really novel. In it the author gives us a most complete resumé of cases of normal and abnormal reflex effects, causing healthy or unhealthy excesses or aberrations of secretions. He also considers very fully the causation of various forms of malady by reflex impressions, and gives at length his views as to the utilization of normal reflex agencies in the management of disease.

In Lecture XI. the author discusses his own well-known ideas as to the spinal origin of epilepsy, and the experiments by whose aid he has shown that, after certain injuries to the cord, an artificial epilepsy may be induced.

The aura-epileptica receives unusual attention. It appears that in many cases an imperfect aura really exists and may be demonstrated. Usually this is located where the first convulsive movements of the fit occur, or its site may be found by examining galvanically the surface of the body. Sometimes the application of ligatures to one limb at a time may determine where it begins, through the consequent cessation of the commencing symptoms of an attack.

Finally, he collates with his own results the important researches of Kussmaul and Tenner, and arrives at the following conclusions as to the causes and effects in epileptic seizure:—

CAUSES.	EFFECTS.
1. Excitation of certain parts of the excito-motory side of the nervous centre.	1. Contraction of blood-vessels of the brain proper and of the face; spasm of some muscles of the eye and face.
2. Contraction of the blood-vessels of the brain proper.	2. Loss of consciousness, and accumulation of blood in the base of the encephalon.
3. Extension of the first excitation, *partly* due to the accumulation of blood in the base of the encephalon.	3. Tonic contraction of the laryngeal, the cervical, and the thoracic expiratory muscles. (*Laryngismus* and *trachelismus.*)
4. Contraction of laryngeal and of thoracic expiratory muscles.	4. Crying and stoppage of respiration.
5. Farther extension of the first excitation of the nervous centre.	5. Tonic contraction, extending to most of the muscles of the trunk and limbs.
6. Loss of consciousness and tonic contraction in the trunk and limbs.	6. Falling.
7. Laryngismus, trachelismus, and the fixed state of the chest.	7. Asphyxia, with obstacles to the return of venous blood from the head and the spinal cavity.
8. Asphyxia, and the accumulation of black blood in the encephalon and in the spinal cord.	8. *Clonic convulsions* everywhere; contractions of the bowels, the bladder, the uterus; erection; increase of many secretions; efforts at inspiration.
9. Exhaustion of nervous power generally, and of the reflex faculty especially, except for respiration, which gradually becomes normal.	9. Cessation of the convulsions; coma or heavy sleep, after which extreme fatigue and headache.

Lecture XII. contains little else than discussions of physiological questions as to the relations of the medulla oblongata, the pons Varolii and certain parts of the spinal cord with the respiratory movements, convulsive rotatory acts, and other matters of more or less interest to the student of biology.

The appendix constitutes about one-fourth of the whole volume, and contains numerous interesting suggestions as to the treatment of injuries of the spine, burns, etc.

The only general fault to be found with the volume which we have thus briefly analyzed, is the unfortunate lack of methodical arrangement which characterizes it throughout, and which makes it a most fatiguing book to read, in despite of the interest which attaches to all that comes to us from the pen of its distinguished author. Its style it would be unfair to criticise, since M. Brown-Séquard can scarcely be held rigorously to the canons of a language which is not his birthright.

ART. V.—*Hand-Book for the Military Surgeon: being a Compendium of the Duties of the Medical Officer in the Field, the Sanitary Management of the Camp, the Preparation of Food, etc.; with Forms for the Requisitions for Supplies, Rations, etc.; the Diagnosis and Treatment of Camp Dysentery; and all the important points in War Surgery: including Gunshot Wounds, Amputation, Wounds of the Chest, Abdomen, Arteries, and Head, and the Use of Chloroform.* By CHARLES S. TRIPLER, A.M., M.D., Surgeon U.S.A., and GEORGE C. BLACKMAN, M.D., F.R.M.S., etc., etc. 12mo., pp. 163. Cincinnati: Robert Clarke & Co., 1861.

A Practical Treatise on Military Surgery. By FRANK HASTINGS HAMILTON, M.D., etc., etc., etc. 8vo., pp. 232. New York: Bailliere Brothers, 1861.

VERY few, even of those best qualified for the practice of civil surgery, would be found capable of entering at once upon the army medical service without some hints derived from the experience of those who have already labored in that field; it is, therefore, in the due course of things, that, at the present juncture of our national affairs, when a large volunteer force is to be raised, and must be accompanied by competent surgeons, attempts should be made to assist these gentlemen in preparing for their new duties; and even then there must be many things which every man must learn for himself, in the actual discharge of his functions.

The first of the books named in the heading of this notice is, as it purports to be, a hand-book, and a very good one. Its scope is, to a great extent, set forth upon its title-page, and we are sure that it will prove of essential service to those for whose use it is intended. There is not within our knowledge a more comprehensive or convenient manual on the subject. Dr. Hamilton's work, while it contains a great deal of valuable information, bears evidence of the haste with which it was prepared, and does not really come up to its author's usual standard of accuracy and thoroughness, at least in that portion devoted more exclusively to professional matters. It is somewhat copiously illustrated, and in this respect has the advantage of its fellow in the present notice. We can honestly recommend those who are about entering upon the medical service of the army to study carefully both these works, perhaps in preference to the more extended treatises of Hennen, Ballingall, Guthrie, Macleod, and others. Or rather, let these essays be used as guides to the general comprehension of the subject, so that the novice may be at least saved from disgracing himself; the experience of such men as those just named may and should be afterward drawn upon as much as possible, when time permits, and their value can be appreciated. It only remains for us to comment briefly upon a few practical points, which have occurred to us in connection with the various topics discussed by our authors.

The surgery of the army differs in some respects from that of civil life, although its fundamental principles are precisely the same. An army surgeon sustains a continual responsibility for the hygienic regulations of the troops under his charge, and must understand just how far, and by what means, it is his duty to modify or control them; in this respect he has much more his own way than a civilian can ever have. He has usually a special set of diseases and injuries to deal with, and under circumstances which, always peculiar, may become in the highest degree trying to his skill and judgment. After an engagement, a greater or less number of wounded men are thrown upon his hands; and to discharge his duty toward them properly, may demand the utmost exercise of his energy and discretion. No amount of fatigue, hunger, thirst, discomfort, or danger must ever deter a surgeon in any sphere from fulfilling his functions; but these hinderances are far more commonly met with in military than in civil practice.

In both the volumes before us we find much that is valuable in regard to the hygienic management of troops. Dr. Hamilton has gone a step behind this, giving a chapter on the examination of recruits, in preparing which he acknowledges his indebtedness in great measure to the "Manual" of Dr. Tripler, adopted by the War Department. Dr. H. has also entered somewhat at length into the subject of the diet, clothing, and lodging of the soldier, in and out of hospital; he gives some useful illustrations in connection with his remarks on the latter of these topics.

It can hardly be necessary to insist upon the importance of such matters, which might indeed be usefully discussed in a separate volume. Too often the surgeon, either from indolence, from an aversion to interfering with what might seem to be without the sphere of his duty, or from a consciousness of a want of practical knowledge, withholds the ounce of prevention, and in due time is called upon to administer the pound of cure. Then, perhaps, having it imperatively forced upon his notice that an infringement of hygienic laws, with its unfailing retribution, constitutes the rationale of the claim upon his services, he learns to avoid any repetition of the evil. Undoubtedly, there are cases in which the risk to health must be run, just as the risk of being shot in battle must be, or where the unfavorable condition is beyond reach; but we feel certain that an earnest and continued vigilance on the part of the surgical staff of the army would go far to lessen the suffering and mortality incident to the carrying on of any war.

One fact must, however, be considered with regard to the diet and clothing of soldiery; these matters are under the charge of officers of the quartermaster's and subsistence departments, and are provided for in the Army Regulations, in general terms. Hence, as for instance in regard to uniforms, it may be competent for the surgeon to suggest, but not to do more. It would, perhaps, be well if the medical officers were allowed greater influence in the arrangement of these things, although there is no doubt that this depends in the case of each surgeon upon his established character for good sense or otherwise, and upon his tact and judgment in dealing with other functionaries. The genius of some nations leads them to adhere obstinately to what they are accustomed to, even if its disadvantages are manifest; but such is not the tendency of our countrymen, and we hope to see all the teachings of experience made useful for promoting the health, comfort, and efficiency of our soldiers.

Let us note in passing, that Dr. Hamilton says "broad flannel bands, placed around the abdomen, make tolerable substitutes for shirts." This is very true; but we would extend the application of these bands, and have them used by every soldier, with or without a shirt, if his duty calls him to serve in hot or variable climates or seasons. Sure are we that this is one of the most certain and effective precautions against those disorders of the abdominal viscera which have disabled or destroyed so many men under such circumstances.

Dr. Hamilton has done very good service, we doubt not, to many a young army surgeon, in writing as he has upon the various methods of lodging soldiers. It is singular how many sensible men are entirely ignorant of the practical details of this subject. For instance, in regard to the sinks for a camp, although their position is prescribed in the Army Regulations, the mode of arranging them is left undecided. Dr. Hamilton says "they should be narrow and deep, so as to leave as little surface for evaporation as possible; and every day a certain amount of the earth excavated in their construction should be replaced until the whole is covered in, and then new sinks should be dug. When latrines can be placed over running water this necessity is obviated." Dr. Tripler says "the usual method of constructing these sinks is to dig a shallow trench, some eight or ten feet long, to drive a strong forked stake at each end, and to place a strong pole, from one fork to the other, for the men to sit on. These sinks should be at least five feet in depth; immediately after reveille, not less than six inches of earth should be thrown upon the deposits of the preceding day and night, and when they are filled to within two and a half feet of the surface, they should be completely filled up and new sinks dug." Simple and natural as this plan is, it does not necessarily suggest itself to the mind; we have several times asked intelligent civil practitioners how they suppose the matter is managed, and found them unaware even that any special provision was made for it. On this and analogous points, it is of importance that the surgeon should be informed beforehand; for, although there will almost certainly be found in any body of troops men who know from experience how all these things are done, yet these very men will be apt to neglect their duty, or to perform it improperly, unless they have competent overseers.

One omission, which so far as we know, may be charged to every work hitherto published on military surgery, is really surprising. No mention is made, by any of these writers, of "sunstroke," as it is called, to which troops on the march or on parade are so constantly liable in hot weather, and by which so many lives have been lost.

We cannot but be struck with the slight stress laid by either of our authors upon external applications in the treatment of sick or wounded men. Even in speaking of dysentery, in which dry heat, frictions, fomentations, poultices, sinapisms, or blisters, applied to the abdomen, are so widely used in civil practice, Dr. Hamilton mentions none but internal remedies; and the only outward medication alluded to by Dr. Tripler is that by cupping. Stimulants given by the mouth are relied upon altogether by Dr. T. in the treatment of collapse; but no civil surgeon who sees much of accidents by railroad or machinery—the class of injuries most nearly allied to gunshot wounds—would willingly abandon the use of cutaneous irritation in the shock by which those accidents are so invariably followed. Dr. Hamilton does not speak at all of treating this condition.

Upon the subject of amputation, our authors are agreed in advising that the operation should be primary. Hamilton would restrict the employment of the flap method to cases in which every moment of time is of importance; Tripler recommends its adoption in the arm and thigh, but is in favor of the circular for the forearm and leg. We would suggest that perhaps the operation depends for its success far more upon the after-treatment, and upon the attention paid to the moving, etc., of the patient, than to what we cannot but consider as trifling modifications of the process of amputation. In making this remark, we have reference to military practice alone. Here existing circumstances are apt to narrow our aims down to the saving of life; and desirable as it may be that every stump should prove suitable for the fitting of an artificial limb, this is a point of less moment than in civil surgery. In judging of the success of army practice, we consider simply the lives saved and lost; in civil practice, we add to the calculation some niceties which must be foregone on the battle-field. A sufficiency of soft parts to more than cover the bone, the thorough ligation of every bleeding vessel, and such a plan of dressing as will completely protect and support the stump,—these are the great points to be aimed at; if they are gained, and the patient safely conducted through the grim array of secondary symptoms, hemorrhage, gangrene, erysipelas, purulent infection, tetanus, the amputation is a successful one. In our own opinion, the less amount of disturbance of the natural relations of the parts in the flap operation gives it a decided advantage over the circular, as usually performed.

As regards anæsthesia, Hamilton prefers ether to chloroform, but thinks both forbidden "when the system is greatly prostrated by disease, or by the shock of a recent injury, unless the patient exhibits an unconquerable dread of the pain of the operation, or the operation is likely to prove exceedingly painful. It is our opinion also," says he, "that anæsthetics sometimes, and especially chloroform, prevent the union of wounds by adhesion, or by 'first intention.'" Dr. H., however, elsewhere attributes the want of success of the Crimean surgeons in obtaining the early healing of their stumps, to their employment of the flap method in amputating, rather than the circular. Tripler and Blackman simply transcribe the remarks of Mr. Macleod, in his "Notes on the Surgery of the Crimean War," in favor of the use of chloroform. So far as our own experience goes, in both hospital and private practice, a combination of ether and chloroform, three parts to one, is an anæsthetic at once safe and efficient.

The subject of resection or excision, as a substitute for amputation, is one which might, we think, have been properly discussed at much greater length than it has been in these works; although Dr. Tripler would seem to limit its applicability to the joints of the upper extremity, particularly the elbow.

Many other topics suggest themselves to us for mention, but we must forbear at present, on account of the limited space we have at command. We would simply hint that, in the fresh editions of these volumes, which are so likely to be soon called for, the authors would do well to insert some general directions as to the order in which a number of wounded men, as after an engagement, should be attended to; so that the novice may not deliberately amputate the little finger of the first man in a row, while the second bleeds to death from the femoral artery, because he was the second, and must wait his turn. It would be well also for them to give directions for one or two of the most generally accepted methods of performing each operation, so that the surgeon may never be without a guide, should his memory fail him at a pinch. The adoption of a special type for these directions, or the grouping of them together at the end of the volume, would make it easier to turn to them at once.

Our readers are probably aware that measures have been taken by the proper authorities to insure the exclusion of unqualified persons from the medical service of our volunteer forces. This judicious movement may be said to be met, on the other hand, by those who have issued, at the present juncture, aids to those who are about to undertake the duties of that service. Of all the various paths open to the willing servants of their country, that trodden by the military surgeon is one of the most arduous and responsible, and one of the least likely to lead to earthly glory; but he is none the less sure of reaping his reward, and that reward will be justly shared by those who aid him in his honorable course.

ART. VI.—*A Treatise on the Practice of Medicine.* By EDWIN R. MAXSON, M.D., formerly Lecturer on the Institutes and Practice of Medicine in the Geneva Medical College. 8vo., pp. 705. Philadelphia: Lindsay & Blakiston, 1861.

THIS volume contains a compendious view of the whole field of medicine, including Pathology and Therapeutics, with a "glance at Anatomy and Physiology." It resembles, in its wide scope, the similar works of Barlow, Elliottson, and Watson, from the other side of the Atlantic; of Eberle, Dunglison, Wood, Dewees, and Dickson, of our own country. It might seem that the student and young practitioner were well supplied with such elementary books, but there is always room everywhere for anything that is good of its class—and all such essays must be judged upon their own particular merits.

At the very threshold we meet with the presentment of a special claim upon our attention:—

> "I have attempted," the author tells us in his Preface, "to draw up the work without even the shadow of empiricism, by taking the human system in health as the standard; and then noting the deviations from that standard, constituting the various morbid conditions or diseases. By taking this course I have been enabled to arrive at clear indications of treatment, from direct pathological conditions, for every prescription which I have made."

We are compelled to say that we have not found these lofty pretensions sustained by the speculations or reasonings and methods of treatment proposed in the succeeding pages. We are persuaded that our divine science, with all its admirable progress, has not yet prevailed so far as to enable us to deduce "clear indications of treatment" and precise selection of "prescriptions," from any knowledge of "the various morbid conditions" of the body or its parts. We fear that the truth is still to be found in the modest disclaimer of Frerichs, one of the most profound of modern scientific inquirers, when he says: "Scientific medicine, although it has not rendered a rational system of treatment possible, has furnished us with important data, in anticipation of such a system. Between the scientific department of clinical medicine and that of real practice, there exists a chasm, which is bridged over, in a doubtful manner, at a few places only." We think our author will speak with somewhat less confidence on this topic of "clear indications" when he is a few years older.

An extensive practice has furnished him with much interesting material, and the reader will find many facts and observations in his histories of particular diseases worthy of record. It is chiefly in his theoretical views that he departs from the notions generally entertained among physicians, and we shall occupy a little space in commenting upon these views.

In his opening chapters upon the nature, origin, and causes of disease, he refers us directly to the fall of man as the sole source of suffering and death: "It is unreasonable to suppose that accidents, or even the elements of nature, which now appear to produce disease, would have harmed him, if he had retained his original purity." Is he aware that disease and death are known to have entered the world before the era of man's creation? Zeis, Wyman, and Agassiz tell us of fossil remains of that remote antiquity, exhibiting a variety of abnormal and "morbid conditions." Again, he declares that "it is absurd to suppose that God made contagions;" but in Chapter XIII., sections 9 and 10, he treats of "animalcular eruptions" and "cryptogamous eruptions." If the animalculæ and cryptogams causative of these "morbid conditions" were not created, they must be of spontaneous or equivocal generation—a heresy not tolerated for a moment by the theological school to which our author belongs. We leave him to select for himself the easiest horn of the dilemma.

Believing that human life, in the primal epoch, reached one thousand years, he ascribes the progressive shortening of its duration down to the present time, to the accumulative influence of successive violations of the laws of God and nature. He lays a peculiar stress, among these, upon "Irregularity in taking food," to which, apart from its quality and quantity, he ascribes, directly and indirectly, almost all "the ills that flesh is heir to." Page 25:—

> "If food be taken at irregular hours, or between meals, the gastro-intestinal mucous membrane becomes irritable; the nervous system becomes irritable; all the fluids and solid structures of the body become more or less deranged, and the patient becomes strongly predisposed to scrofula, consumption, dropsy, epilepsy, catalepsy, and, in fact, almost every variety of disease to which the human system is liable."

Tobacco, also, he dwells upon as "a fearful cause of disease, containing, as it does, three deadly poisonous principles, nicotia, nicotianin, and an empyreumatic oil;" and unhesitatingly sets it down as producing "mania a potu or delirium tremens." Page 298.

Of the nature of malaria, or Koino-miasmata, he speaks with unusual reserve, and proceeds "to raise the question, how far, if at all, Koino-miasmata would have been injurious to the human system, provided the laws of health had always been observed and our constitutions had never been depraved." In the latter case, he "inclines to the opinion that it would either have remained harmless to us, or else we should have retained good sense enough to have kept beyond its reach." Ignoring all the known differences of degree of liability to suffer from it among the various races of men, he espouses the doctrine of acclimatation, admitting not only that "the system gradually becomes accustomed to its influence, but it is said even requires it;" a rather ultra view of the matter, for which we know not his authority.

He seems somewhat embarrassed, theologically, with the origin and spread of epidemics, but "inclines to the opinion" that those are wrong who "have placed the cause in some mysterious principle beyond the power of man to reach or modify, as though the Almighty had placed us here, and let loose upon us occasional emissaries of destruction, without our own fault, or even ability to palliate or resist."

He seems to agree with Forbes, that as "medicine is, at best, little better than a necessary evil," "nothing should be prescribed as a remedy without first getting a clear indication." In all doubtful cases, therefore, the expectant method is to be followed; but, as we intimated above, he differs greatly from Forbes, and all other such skeptics, as to the readiness with which "a clear indication" is attainable in the present state of our knowledge. Thus, under the head of "Intussusception," which he treats of, very originally, as a special malady, he says, "Such are plainly the indications of this obscure and truly dangerous affection." Dividing the attacks into "direct and retrograde," he manages them with a logical reciprocity; if produced or preceded by catharsis, he administers emetics; if by vomiting, he exhibits cathartics.

We find ourselves carried back into genuine Broussaisism on page 72, where such a confusion is established between general fever and gastro-enteritis "as to make it a matter of doubt which is the cause and which is the effect." Yet he pronounces that "intermittent fever is essentially a disease of the nervous system," and "seriously questions whether it should be regarded as a fever, or as an intermittent neuralgia." He considers it proved that "gastro-enteritis, together with the influence of the paludal poison, is the cause of bilious-remittent fever," thus solving the difficult question as to the relation between remittents and intermittents. In the treatment of the latter, he adds iron-wood to the long list of remedies, and does not hesitate to administer quinine in remittents, and is "persuaded, from extensive and careful observation, that its effects are most salutary," although "it may appear strange to some that quinine should be given in two or three grain doses, every six hours, when there is a high state of febrile excitement." Page 109.

Like some others of our Western brethren, he admits and treats of a "Simple Continued Fever," distinct from the enteric or typhoid. He devotes to this subject an entire section of his Chapter IV., "On General Fevers," which is worthy of, and will repay an attentive perusal. He places diphtheria under this same category, in another section, as an idiopathic fever.

In a notice of the special views entertained by the author, it would be improper to omit his remarks on ablution, page 605:—

> "Too much washing and fretting the skin increases its filth, by calling to the surface fluids that ought to be thrown off by the kidneys and bowels, and is very apt to produce constipation. If we had been designed by the Creator for aquatic animals, we should have been supplied with fins instead of legs."

The common opinion that the drinking of water impregnated with lime produces or increases a liability to stone in the bladder, has, we know, been opposed by many authorities, among them the distinguished pathologist and professor, editor of this journal; but we have not before met with the seemingly paradoxical notion that such waters are corrective and protective, as is maintained by Dr. Maxson, who says, page 648:—

> "It appears probable, that the constant use of lime, as it exists in the water in limestone regions, tends strongly to prevent a lithic acid diathesis and deposit, and hence is a partial security against the formation of urinary calculi of all kinds."

The style of the treatise is plain, simple, and intelligible, but often inelegant. The book, which is otherwise well got up, is defaced by an unusual number of typographical errors, among which we suppose we must include the phrase "incontinuance of urine," which occurs nine times on one page.

ART. VII.—*The Physician's Pocket Dose, and Symptom Book; containing the Doses and Uses of all the principal articles of the Materia Medica, and Officinal Preparations; also Tables of Weights and Measures, etc., etc.* By JOSEPH H. WYTHES, A.M., M.D., author of the Microscopist, etc. Third edition, 18mo., pp. 244. Philadelphia: Lindsay and Blakiston, 1861.

WHEN a work passes through successive editions we naturally expect to find the latest edition more accurate in every respect than those which preceded it. The errors of the past, if any existed, may then be forgotten in the correctness of the present. We imagined, therefore, that the third edition of Dr. Wythes's book might possess special claim to our notice, and that we might have it in our power to commend it as a useful little work of reference. We were not prepared to find such negligence, exhibited in numerous typographical errors, which imply either indifferent proof-reading or carelessness on the part of the author. In a cursory glance at its contents we detect many inaccuracies and omissions, a few of the more glaring of which we cite by way of illustration.

In Chapter IV., "Table of Poisons and their Antidotes," no distinct mention is made of poisoning by strychnia, though its importance demands special consideration. The heading, "Opium and other Narcotics," perhaps is intended to include the subject of strychnia and kindred alkaloids. The classification of the Materia Medica is that suggested by Headland, which had its day of popularity, but is not destined to be adopted at all universally. These, however, are minor points of distinction between therapeutists, and not of so much consequence as positive errors.

And first as to officinal names, of which the author evidently makes a feature in his work, and a feature they really may be considered when printed as some of them are. For instance, we have liquor plumbi subacet*as*, aqua camphor*a*, aqua cinnamo*ni*, emplastrum ammonia*cum*, emplastr*i*um assafœtidæ, infus*is* for infusum, quin*æ* sulphas, morphi*a* acetas, tinctura gallæ aromatic*us*, tinctura valerianæ ammoniat*i*, pilulæ aloes et myrrh*a*, aqua acid*a* carbonici, calcis hydrat*us*, emplastrum picis cum cantharid*æ*. As the author states in his preface that "the list now embraces *every* officinal remedy and preparation," we have thought it worth while to look for some of the ordinary articles of the pharmacopœia, and we find several of them either missing or not printed in accordance with the nomenclature of that authority. Argenti nitras fusus is omitted entirely, so also are adeps, ferri pulvis, liquor plumbi subacetatis dilutus, potassa cum calce, potassæ carbonas impurus, liquor ferri iodidi, and a few others.

If our own national standard has formed the basis of this little work, and we find nothing in title-page or preface to tell us the contrary, from what possible source of faulty information can the author have obtained many of the items which, he considers, "render it a *vade mecum*, in which the most useful information is compressed into the smallest possible compass"? Every man who professes to the world that he follows the United States Pharmacopœia is bound to respect its authority.

We find, for instance, aether sulphuricus instead of æther; aconitina, the very poisonous active principle, given as a synonym to aconitum, a most inexcusable mistake; sulphur sublimatum instead of sulphur; spiritus ætheris *sulphurici* compositus, etc. Vinum antimonii is made of tartar emetic ℈ij, and sherry wine Oj, instead of ℈j to f℥x; and liquor potassæ arsenitis, (Fowler's solution) 80 grains each of arsenious acid and carbonate of potassa, instead of 64 grains, to the pint of water. Emplastrum ammoniacum, (ammoniacum plaster,) and emplastrum ammoniaci, (ammoniac plaster,) are mentioned as if they were two distinct plasters. Then we have ferri iodidi solutio, instead of liquor ferri iodidi. Liquor sodæ chlorinatæ (Labarraque's solution) is wrongly made, and separated from liquor Labarraquii chloro-sodicus, which is of a very faulty nomenclature and not officinal.

Iodide of potassium is not made according to the Pharmacopœia method, by the combination of iodine and potassium, but by adding iodide of iron and carbonate of potassa. Acidum arseniosum is not mentioned as ever given in pill; and ratsbane, a common name for arsenic, is carried over to the side of strychnia as its synonym. Under quinia, we are told "see cinchona," but we look there in vain for a word about quinia; so also under sassafras, "see decoction," but there is no such heading as "decoction" in any part of the book.

Hydrargyrum ammoniatum, which is in reality an amidide of calomel, ($Hg\ Cl,\ NH_2$) is spoken of as "a binoxide, combined with bichloride of mercury and ammonia, forming a triple salt." Extractum sarzae occurs as well as decoctum sarzae compositum; and we find under the letter S, sarsaparilla instead of sarza. We had hoped that the old term "deobstruent" had been allowed to die a natural death long since, but we here find it revived; we confess we have no very definite idea what it means as used by the author. "Infusum cinchonæ cum succo limonum" is a wholly useless addition to the list, unless it has, we may suggest, something added to it, such as "et saccharo albo," by way of giving it lengthiness and pleasantness.

The author errs in stating (p. 103) that Magendie's solution of *sulphate* of morphia contained 16 grains of that salt to a *fluidrachm* of water; he employed the *acetate*, not the sulphate, and in the strength of 16 grains to the *fluidounce*—a point of material importance, so far as the dose is concerned.

The faults of the index, of course, correspond with those of the body of the work. We have purposely omitted allusion to the chapter on symptomatology, general pathology, etc., because we deemed the other portions more important. We must protest, however, against "dulness of sound," "wooden sound," etc., as being the "effects of percussion," (p. 196;) or "weak respiration" or "bronchial respiration," as the "effects of auscultation." In conclusion, we may suggest that the author should revise the posological parts of the volume. The doses are generally accurate, but occasionally medicines are employed for therapeutical actions not mentioned by the author, and therefore with slightly different doses.

It was not our intention to notice Dr. Wythes's book so fully; we have pointed out errors in it in a kindly spirit, because we have thought its usefulness to the profession might be augmented by revision for a succeeding edition. There is a convenience frequently in having a little companion in the pocket for reference, when one's memory is at a loss for names or doses.

ART. VIII.—*Compendium of Human Histology.* By C. MOREL, Professor Agrégé a la Faculté de Médecine de Strasbourg. Illustrated by Twenty-eight Plates. Translated and Edited by W. H. VAN BUREN, M.D., Professor, etc. 8vo., pp. 207. New York: Bailliere Brothers, 1861.

THE work of M. Morel does not profess to be an elaborate treatise on Human Histology; it belongs rather to that very valuable and commendable class of publications which give the student an insight into the more profound portions of the subjects which they discuss, without allowing him to be overwhelmed by incomprehensible theories or conflicting views of observers. Such books are introductions to more extensive works on the same subjects, and were it not for their kindly guidance, many a confused mind would give up in despair the study of some of the most interesting facts in medical science.

The volume before us is, of course, descriptive anatomy, applied to minute points of structure, and, as in works on special anatomy, constant reference is made to the engravings, which constitute so important a feature of the book.

The letter-press of this Compendium of Histology would scarcely cover a hundred pages of the usual octavo volumes, for the blank margins are nearly as wide as the columns of printed matter. The engravings are very prettily executed, and the type is unusually large.

We agree with Dr. Van Buren, the editor, that the style of the author is precise and compendious. We think, however, that brief and comprehensive as the work is, it errs in assuming that "the reader is a good descriptive anatomist, and possesses a fair knowledge of general structure."

The notes of the editor and translator are almost wholly bibliographical or personally historical, and in this respect differ from the usual style of foot-notes, so often added to medical works for the self-glorification of the editor, who, not content with seeing his name in print on the title-page, endeavors to improve on the views of his author by gratuitous insertions of his own.

When mention is made (p. 43) that two translations of Kölliker's admirable treatise on "Human Microscopic Anatomy" have appeared, it should also be stated that in 1859 the Sydenham Society's translation was republished in Philadelphia, with excellent annotations by Dr. Jacob Da Costa.

ART. IX.—*Theory and Practice of the Movement-Cure; or, the Treatment of Lateral Curvature of the Spine, Paralysis, Indigestion, Constipation, Consumption, etc., by the Swedish System of Localized Movements.* By CHARLES FAYETTE TAYLOR, M.D. With Illustrations. 12mo., pp. 295. Philadelphia: Lindsay & Blakiston, 1861.

WE take up this work for notice with some distrust of our being able to forget, for the time being, that it looks like an advertisement of a specialty. It is an attempt to introduce a new mode of practice, and to apply it to a large number of the diseases included in the catalogue of human ills. Like all such innovations on rational therapeutics, its merits, whatever they are, may be pushed further than probability of success would justify. A practitioner who sees good effects in isolated cases is often disposed to generalize and apply his modes of treatment universally. This book of gymnastic exercises appears as if it might be placed under the same category. The Movement-Cure, under its various synonyms, Kinesipathy, Kinesitherapia, Motorpathy, Medicina Mechanica, and Lingism, is not of very recent introduction into medical arts, having been applied, in the words of Dr. Taylor, to the cure of diseases "by Peter Henry Ling, poet and philosopher, to teach us not only to despise effeminacy, and to emulate the physical nobleness of the old Norse heroes, but to banish disease by the beautiful system he originated."

We do not stop here to discuss the theoretical views of the author, or to refer to the intimate connection, which he dwells upon, between muscular action and the exercise of various functions in health and disease. The therapeutical portion of this collection of monographs, which were originally published in the medical journals of New York, constitutes the special subject of our consideration. The principles of treatment may be best explained in the language of the writer:—

> "The Movement-Cure treatment," he says, "is simply certain physiological principles put to practice. That, by a right employment of the muscles, we can produce *mechanical* results and alter the form of the body, can be illustrated in the treatment of spinal curvatures and other deformities; that we can produce, by a modification of the same means, a special impression on the nervous system, can be seen in the treatment of paralysis; and that the general physiological processes can be wholesomely affected, will be shown in the treatment of indigestion, consumption, and various other chronic affections."

The author attempts to show, in the early chapters, how, by proper localized movements, in contradistinction to irregular efforts, which might hinder or interfere with, instead of assisting, a depressed function or organ, certain special physiological purposes may be accomplished as a direct result; and how designated groups of muscles, as in lateral curvature of the spine, may be developed, independently of other muscles, so as to cause a muscular action with reference to the spinal column, opposite that which produced the curvature, with the effect of ameliorating or curing the deformity.

> "Even the nerve of a paralyzed muscle," he says, "may be aroused by assuming the conditions necessary for volition to reach it, and it is possible to re-educate it to something like its former functional capacity. So much, then, being under our intelligent control, when managed so as to correct abnormal conditions, becomes, in fact, a medical treatment in those particular cases."

With enthusiastic views of success, the author confidently states that "we may secure the most extensive voluntary sway over the whole system, and its several parts, through the influence which regulated muscular action has over the circulation of the blood," and applies this system of therapeutics to the treatment of constipation, chronic diarrhœa, dyspepsia, pulmonary consumption, angular curvature of the spine, or "Pott's Disease," deformities of the limbs, diseases incident to women, and derangements of the nervous system. One great objection, we should think, to the employment of kinesipathy, in some of these debilitated cases, would be that the remedy, so powerful in its action, might be worse for the patient than the disease; but Dr. Taylor says not, and cites cases to support his enthusiastic views.

Art. X.—*A Manual of Human Microscopic Anatomy.* By A. Kölliker, Prof. of Anat. and Phys. in the University of Würzburg. With 249 Illustrations. 8vo., pp. 633. London, 1860.

This valuable work, in its original German edition or in its English and American translations, is so well known, and has been so often noticed by the journals of Europe and America, that commendation now is almost superfluous. The author informs us that the book which he now presents to the English medical public is, in the main, a condensed version of the second German edition (of 1855) of his "Handbuch der Gewebehlehre," but that every material addition that has been made to human microscopic anatomy, up to the present date, is found incorporated in it. The work is, therefore, brought well up to the third German edition, that of 1859.

He calls attention to the fact that at the time of the issue of this translation, there was no work in English scientific literature devoted wholly and exclusively to the detailed treatment of the textural anatomy of man, as at present known. The translators, Dr. George Buchanan and "another friend," neither of whom is mentioned in the title-page, the latter being either too modest or too much neglected to be even alluded to by name in the preface, have done their duty well, and have thus given to the profession, thanks to the publisher, a handsome work, which is worthy of a more extended acquaintance with its merits than was possible in the restricted circulation of its previous edition by the Sydenham Society of London.

A new translation, with new additions and new views of histology, constitute virtually a new book, which, as a work of reference, deserves a place in every medical library. Good books on human microscopic anatomy are scarce, and that of Prof. Kölliker is so well known that we have not deemed it more than necessary to mention the fact of an improved edition having been issued.

ART. XI.—*Report on the Importance and Economy of Sanitary Measures to Cities.* By JOHN BELL, M.D., of Philadelphia. (Board of Councilmen, Nov. 28, 1859.) Doc. No. 20, New York, 1860.

Draft of a Sanitary Code for Cities, (Reported to the Committee on Internal Hygiene.) By HENRY G. CLARK, M.D., of Boston, one of the Committee.

Report upon Sewerage, Water Supply, and Offal. By JOHN M. GRISCOM, M.D., of New York.

THE three great cities of the North and East are here found in a very sisterly manner inquiring after each other's health. Philadelphia shows how necessary it is to the sanitary condition of her own people and those of every other city to attend to ventilation, sewerage, and offensive emanations of all kinds. Boston coincides with her hygienic views, and furnishes the plan which she thinks best adapted for preserving the public health, so that no fastidious nose shall be offended, and nothing but pleasure to the senses flow into every channel of communication with the external world. New York very modestly comes in at the end of the book with her views upon special subjects of sewerage, water supply, etc.; minor, but very important subdivisions under the general head of sanitary regulations, which form the grand subject of the whole volume before us.

The report of Dr. Bell is rather too lengthy for popular reading, although it is full of valuable information as to the progress of sanitary measures from the earliest times. We should have been glad to see at the end of this report a summary of the interesting facts with which it abounds, from which we might have quoted some of the author's conclusions, but in its absence we must content ourselves with a brief notice of its objects and its facts.

Beginning with ancient Egyptian, Carthagenian, and Roman hygiene, he speaks with confidence of the amelioration of the sanitary condition of cities which accompanied advancing civilization.

> "The mortality in Paris in the early part of the fourteenth century has been estimated, from a manuscript document, to be 1 in 20; whereas the average mortality of the inhabitants of that city, in the very poorest arrondissement or ward, as we might term it, in which poverty and destitution are extreme, was 1 in 24, in the first third of the present century. The average deaths in all Paris at the same date (1830) was 1 in 32, and among the more wealthy inhabitants, 1 in 42. * * * M. Marc d'Espine, in a late work on 'Comparative Mortuary Statistics,' shows that the *probable* life at Geneva in the sixteenth century was rather less than 5 years; in the seventeenth century, 11 years; at the beginning of the eighteenth century, 27 years; at the end of the century, 32 years; and now it is 44 years. M. Mallet had previously ascertained, from the same documents, that the mean duration of life in Geneva, in 1833, was nearly the double (or as 40 years 5 months to 21 years 2 months) of that recorded rather more than two centuries before."

At this rate of progress, we should scarcely be surprised if statisticians would try to convince us that in the course of the next few centuries we may look upon octogenarians as young men with a long future before them.

The usual arguments in favor of a complete system of sewerage are detailed; but the points which principally interest us in this connection, such as the effect of the sewerage gases on the animal system, are quoted from the able report of Dr. Letheby of London. Cases of chronic poisoning produced by the inhalation of very small quantities of sewer miasm are given, as well as the means of remedying such miasms or of preventing the offensive and toxical effects of the emanations from sewers by disinfectants and deodorizers.

Dr. Bell then discusses at length the difficult subject of ventilation, with reference especially to the cellar and alley life of our large cities. The general want of ventilation in schools, hospitals, printing-offices, and factories is referred to, the defect of light, and the remedies for these conditions. The different modes of ventilation usually adopted and the merits of each are discussed. All artificial ventilation is accomplished in one of three ways: 1st, by heat or by a chemical process; 2d, by pumping, or a mechanical process; or 3d, by the pressure and movements of the atmosphere, without let or hinderance. We think with the author that "the great number of plans for ventilation would imply that an easy and efficient system is not yet reached."

Water supply, intemperance, sanitary improvements, pulmonary and cutaneous purification, nuisances, and interments in cities, form the subject-matter of the balance of the book, but are treated at such length that we can merely refer to them without quoting any passages. The whole report teems with interesting general information, and we know of no one who, having a subject given to him with such wide scope for voluminousness, could more ably than Dr. Bell bring together an immense mass of materials from all available sources.

The Reports of Drs. Clark and Griscom are also to be commended as efforts directed in like manner to the preservation of the public health.

XII.—*To what Affections of the Lungs does Bronchitis give origin?* Prize Essay. By DANIEL DENISON SLADE, M.D., of Boston. 8vo.

DR. SLADE had no competitors for the prize of one hundred dollars, offered by the Massachusetts Medical Society for the best dissertation on the subject referred to in the title of this notice. We will not say that *therefore* the committee unanimously adjudged him that amount, for his essay is a carefully-prepared paper; but in the total absence of competition, it was not likely that much difference of opinion could exist among the members of the committee. There is this point to remark, however, that, being the only essay presented, it must have been thoroughly scrutinized by each of the Prize Committee, and therefore the compliment paid to Dr. Slade is the more marked.

A paper written to order, and not springing spontaneously from the writer's own suggestive mind, ought not to be expected to be eminently original. Authorities have to be ransacked to see if the subject for a prize, which may never have occupied more than a moment of the writer's consideration previously, has not been worn threadbare already, or to discover if new paths can be opened out by new researches. We may, therefore, expect to find frequently abstracts of the opinions of others rather than purely original papers. This remark only partially applies to the essay before us; for it would be unjust to the author were we to pass over the evidences which are presented of a practically inquisitive mind and an extended appreciation of the importance of pathological phenomena.

The principal subjects investigated are: collapse of the lung as consequent upon obstruction of the bronchi; its causes; the effects of inspiration and expiration in their power to get rid of bronchial obstructions; the mechanical condition, conducing to the production of collapse, to be found in the air-tubes themselves, etc. The writer arrives at the following conclusions:—

That the production of collapse of the lung is due, first, to the existence of mucus in the bronchi, which is the more liable to produce collapse in proportion as it is tenacious; secondly, to weakness or inefficiency of the inspiratory power, however it may be caused; thirdly, to inability to cough or to expectorate, and thus remove the obstructing mucus.

The pathology of bronchial abscess as related to bronchial collapse; the conflicting views of authors on the question, "Does bronchitis give rise to true pneumonia, lobular as well as lobar?"; the secondary and more permanent lesions of the lung, the result, for the most part, of bronchitic collapse, and leading to atrophy of the lung, and vesicular emphysema as a secondary effect of bronchitis, are also discussed at some length. The writer thinks that vesicular emphysema *may* be produced by the expiratory act, but that, in addition to either this or the inspiratory act, another condition is necessary to the perfection of the theory, and this is to be found in the partially diminished bulk, or, in other words, pulmonary collapse or permanent atrophy of some portion of the lung.

The effects, on the lung, of contraction, obliteration, and dilatation of the bronchi are alluded to; the relation of asthma to bronchitis, and of the latter to phthisis. Humoral asthma is undoubtedly owing, in many cases, to a spasmodic derangement of the muscular fibres of the bronchi, whereby a great accumulation of mucus takes place, since in health the removal of this mucus depends upon the regular action of these fibres. Bronchitis is neither a direct nor a frequent cause of phthisis; and is to be so considered only when a predisposition exists.

ART. XIII.—*Eighth Annual Report of the Pennsylvania Training School for Feeble-Minded Children.* Philadelphia, 1861.

WE always hail with pleasure the yearly-recurring statement of the prosperity of our benevolent institutions. The Training-School is one of the latest of that class, which has grown up into a deserving object of our fostering care and interest. When this institution for imbeciles becomes divided, according to the suggestions of the superintendent, into a school for such as are qualified, a gymnasium for physical culture, a hospital department for the sick, and a mechanical and agricultural department for the promotion of industry, with a view to the self-support of the inmates, it will become more eminently useful than ever, successful as it has already been in the purposes for which it was initiated several years ago.

We are glad to see so much stress laid upon the physical development of the children, and an effort made to abolish routine modes of accomplishing this result, by regarding each case as a problem to be studied individually, and treated according to its requirements. In the school department a word or two learned per week is considered good progress for those who have been always silent, and those further advanced are encouraged to develop all their latent powers in every possible mode that toleration, charity, and sympathy can suggest. Parents are often deceived, however, by the happy progress of apparently hopeless cases, and are disappointed that their own children, to all appearance so much more promising, should remain so stationary, even after ardent efforts to ameliorate their condition.

The present number of inmates is nearly ninety, about two-thirds of whom are males, divided as follows:—

Epileptics	11	Mutes	21
Scrofulous	50	Semi-mutes	20
Deformed	4	With defective articulation	22
With chorea	3	With correct articulation	25
Healthy	15		

ART. XIV.—*Pathological Phenomena Generalized.* By H. BACKUS. 8vo., pp. 42. Selma, Alabama.

THIS paper does not require a very extended notice at our hands; we do not feel, after perusing it, that we have added very considerably to our knowledge of the subject of pathology. The truth is, a large proportion of the pamphlet is made up of quotations from Copland, Rokitansky, Watson, and others. Congestion, as the effect of pressure, is the theme which the writer discusses on every page.

The points on which he particularly dwells are: 1. That all exciting causes of disease produce the state marked by the term congestion. 2. That this state precedes and coexists with all pathological phenomena more complex than itself. 3. That the treatment of congestion illustrates the treatment of all special diseases. 4. That this state is a constant post-mortem appearance, whether there be recognized organic change or not. The writer's object appears to be to deduce the immense variety of pathological phenomena from the state of congestion produced by pressure; and we have no doubt that he has succeeded in convincing himself of the infallibility of his reasonings.

Original Communications.

Art. I.—*On the Mensuration of the Human Skull.* By J. Aitken Meigs, M.D., late Professor of the Institutes of Medicine in the Medical Department of Pennsylvania College, etc.

> "Omnia *mensura*, et numero, et pondere disposuisti."
> *Moschus of Sidon*, Liber Sapientiæ, xi. 21.

> "La mesure de la tête, loin d'être une methode surannée, oiseuse, qu'il faut proscrire, est une découverte savante, nécessaire, que nous devons conserver. Tout modèle pris d'après nature, renferme une vérité; sachons l'étudier, le comprendre et l'utiliser."
> *Deschamps*, Études des Races Humaines, 99.

The study of human cranial forms undoubtedly constitutes a very important, if not indeed the fundamental, chapter in ethnographic morphology. For the successful prosecution of this study, exact measurements of the calvaria and face are required. Metrical data of this kind are very useful in determining the physiological relations not only of the skull to the inclosed brain, but also of the different portions of the skull to each other. A thorough knowledge of these relations is absolutely essential before any successful attempt can be made at the zoological classification of the races of men. Hence the utility of devising some systematic method of measuring the cranium has been recognized by nearly all writers upon craniography, from the days of Spigel and Severin down to the present time. "Vix opus est ut copiose dicam de utilitate," writes Professor Van der Hoeven, in the recently published Catalogue* of his cranial collection, "quæ cum diligenti notatione dimensionum in diversarum gentium craniis conjuncta est. Ut normam quamdam mediam habeamus, ut certior et aptior usus sit verborum, quibus utimur in dijudicanda cranii cujusdam aut singularum etiam partium e quibus constat magnitudine, omnino requiritur ut hæ dimensiones notentur, colligantur, conferantur. Est opus tædii plenum, quod nugatorium multis forsan videtur, sed tamen ad perficiendam craniologiam comparatam pernecessarium." Professor Von Baer, of St. Petersburg, another craniologist of repute, some time ago proposed, in view of the importance of such measurements, that a convention of anthropologists should be held for the purpose of establishing a uniform system, in accordance with which these measurements might be made, and the results obtained by different observers rendered comparable with each other, and thereby enhanced very materially in value.* Professors Huschke† of Jena, and Virchow‡ of Berlin, and others, have also, in recent publications, urged the desirability of cultivating the science of craniometry.

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* Catalogus Craniorum Diversarum Gentium quæ Collegit J. Van der Hoeven. Lugduni Batavorum, 1860, p. 3.

Most of the eminent anatomists who have given their attention to the comparative mensuration of the skull have attempted to express the relation between the calvaria and face by some single measurement or method of comparison. Thus Camper relied mainly upon the *angulus facialis;*§ Daubenton, upon the *angulus occipitalis;*‖ Mulder, upon the *angulus sincipitalis;*¶ Walther, upon the *angulus cranioscopus;*** Barclay, upon the *angulus basi-facialis;*†† Serres, upon the *angulus*

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* Nachrichten über die ethnog. craniol. Sammlung zu St. Petersburg. S. 81.

† Schædel, Hirn und Seele des Menschen und der Thiere nach Alter, Geschlecht und Race, dargestellt nach neuen Methoden und Untersuchungen. Von Emil Huschke. Jena, 1854. In this admirable and elaborate work the author endeavors, with equal zeal and skill, to establish the precise relations existing between the skull, brain, and intellectual faculties.

‡ Untersuchungen über die Entwickelung des Schädelgrundes im gesunden und krankhaften Zustande, etc. Von Rudolf Virchow, Berlin, 1857.

§ Dissertation physique de M. Pierre Camper sur les Différences réelles que présentent les traits du Visage chez les Hommes de différents pays et de différents âges, etc. Autrecht, 1791.

‖ Mémoire sur les Différences de la Situation du Grand Trou Occipital dans l'Homme et dans les Animaux, in Mém. de l'Acad. Royale des Sciences de Paris, 1764, p. 568.

¶ A line is dropped from the most prominent part of the frontal bone to the most prominent of the superior maxilla; this is crossed by another line passing backward and downward through the naso-frontal suture to the spheno-basilar junction. The upper angle formed near the glabella by the intersection of these two lines is the sincipital angle. (*Dissertatio de Cranio ejusque ad faciem ratione pro gradu doctoratus, submittit W. H. Crull*, Groningæ, 1810, p. 56.)

** A line drawn from the crista galli of the ethmoid bone to the external occipital spine is crossed by one connecting the most prominent point of the os frontis with the root of the nose. The "cranioscopic angle" thus formed measures the different grades of human and humanoid cranial forms, and enables us to recognize at a glance national and even individual differences. (*Kritische Darstellung der Gallschen Anatomisch-physiologischen Untersuchungen des Gehirn und Schaedelbaues.* Zurich, 1802, viii. p. 108.)

†† "Dr. Barclay, observing that the apertures of the ear and nose differ considerably in position in different animals, and that even in man the aperture of the ear is lower during infancy than in the adult, and further observing that these variations are independent of the general proportions of the skull, retained Camper's facial line, but drew the second or basial line along the under surface of the palate, continuing it forward to meet the facial line in front of the alveolar process. His reasoning, so far as it goes, is just; and his angle not only more accurate, but easily measured than Camper's, especially with the craniogoniometer invented by Dr. Leach, which indicates the span of the angle on a graduated arc." (*Outlines of Human Osteology.* By F. O. Ward. London, 1838, p. 147.)

meta-facialis;[*] and Quatrefages, upon the *angulus parietalis.*[†] Cuvier compared the areas of the cranium and face upon a vertical antero-posterior section of the head;[‡] Blumenbach suggested the *norma verticalis;*[§] Owen, the *norma basialis.*[||] Tiedemann determined the internal capacity of the skull by filling it with millet-seed, and then ascertaining the weight of the seed.[¶] Morton adopted a similar expedient, at first using white pepper seed, and afterward resorting to No. 8 shot.[**] Hamilton gauged the interior of the skull with pure siliceous sand.[††] My friend and correspondent, Mr. J. Barnard Davis, estimates the internal capacity with fine Calais sand;[‡‡] Volkoff, with water;[§§] and Dumoutier, by means of plaster, which, when hardened, is removed by sawing the cranium in two.[||||] Stratton measures the skull "by marking the quantity of water which it displaces in a receiver of known dimensions. The receiver is constructed as nearly square as possible, 10 inches long, 10 inches broad, and 8 inches deep, inside. One of the sides is a plate of glass; all the other parts are of pine deal, well saturated with paint. On the plate of glass is fixed a perpendicular scale, divided into inches and tenths of an inch. The 0, or zero of the scale, is about five inches from the bottom of the receiver, inside, which is accurately filled with water up to the 0 point before the object be immersed. In taking measurements, the head or skull must be put into the water, with the top lowermost, till the surface of the water touches the articulation of the nasal and frontal bones, and enters the opening of both ears. From the given dimensions of the receiver, it will be obvious that each inch which the water rises on the scale corresponds to 100 cubic inches, (*i.e.* 10 × 10,) and each tenth to 10 cubic inches. The use of a vernier would give single inches, or even tenths of an inch, with equal accuracy, but a practiced eye will find the aid of the vernier unnecessary."[¶¶]

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[*] Études des Races Humaines. Par W. H. Deschamps. Paris, 1857–59, p. 92.

[†] Comptes Rendus de l'Academie des Sciences, t. xlvi. p. 791.

[‡] Leçons d'Anatomie Comparée, t. ii. pp. 167–171.

[§] De Generis Humani Varietate Nativa. Edit. 3a. Gottingæ, 1795, p. 203.

[||] Memoir on the Osteology of the Orang and Chimpanzee in the Zoological Transactions, i. p. 343.

[¶] Philosophical Transactions of the Royal Society. London, 1836. p. 497–528.

[**] Crania Americana, p. 253. See also Dr. Morton's Catalogue of Skulls of Man and the Inferior Animals. Third edition, p. 7.

[††] Edinburgh New Philosophical Journal, April, 1850.

[‡‡] Crania Britannica, p. 11.

[§§] Notice sur l'Épaisseur du Crâne Humaine, et sur l'appréciation du volume et de la configuration du cerveau. Par M. S. de Volkoff, p. 4.

[||||] Ibid., p. 4, *note.*

[¶¶] Contributions to the Mathematics of Phrenology. By James Stratton. Aberdeen, 1845, p. 5.

As early as 1553 the measurement of the head appears to have severely exercised the ingenuity of the famous painter, Albert Durer, who, in his great work, *De Symmetriâ Partium in Rectis Formis Humanorum Corporum*, has given such measurements in almost every view. These, however, are more artistic in their tendency and scope than scientific.

A glance at some of the outline drawings of Durer incontestibly show that the facial line and angle were not wholly unknown to him, and that Camper has rather elaborated than invented this method of cranial measurement. He even seems to have entertained more philosophical views of cephalometry than the Dutch professor, if we may judge from the following remarkable sentence, very remarkable, when we consider the time in which it was written: "Questa certo è cosa certissima, che coloro, che intenderanno la Brutezza, e deformita facilmente intendera, che cosa egli deva schivare nell' opera incominciata per bellezza, e quanto alcuno più si discostera della brutezza, tanto più si avvicinera alla bellezza." (Lib. iii. 84.)

The invention of the *lineæ cephalometricæ* of Spigel, who died in the early part of the seventeenth century, may perhaps be regarded as constituting the earliest scientific attempt at cranial measurement. Desirous of placing the old anatomical doctrine of a determinate skull-form upon the basis of a more exact normal method, Spigel devised four lines or measurements, viz.: a facial line, drawn from the most inferior point of the chin to the most superior point on the forehead; an occipital line, drawn from the crown of the head to the atlas; a frontal line, drawn from one temple to the other; and a sincipital line, drawn from the lowest part of the ear, in the region of the mastoid process, to the highest part of the sinciput. A skull in which these four lines were equal to each other, he regarded as regularly proportioned; one in which one line differed from the other three, he considered to be irregularly proportioned; when they all differed from each other, the head was of the form known to the ancients by the term *φοξὸν*, (sharp-pointed or conical,) a conformation supposed to be indicative of impudence.* Although these lines are evidently not sufficient for the comparative ethnography of the present day, yet it is interesting to observe, that in ascending the zoological scale, these lines approximate equality just in proportion as the head measured approaches the human form. Herder adopted another system of measurement. His *lineæ nuchales*, three in number, were drawn from the atlas as a common centre, severally to the highest point of the crown, to the most anterior point of the frontal bone, and to the most anterior point of the superior maxilla. The angles thus formed differ in different animals, and according to race, sex, etc.*. A vertical line, drawn from the crown to the outer meatus, and a horizontal line, drawn from the incisor teeth of the superior maxilla to the most posterior point of the os occipitis, constitute the *lineæ cephalicæ* of Doornik. The horizontal diameter was divided by the vertical into an anterior and a posterior part. Skulls were compared together by the relation of these two parts to each other.† Spix proposed the five following diameters or *lineæ cephalometricæ:* a horizontal line, drawn from the lowest point of the condyloid process of the occipital bone, to the lower edge of the superior incisor alveoli; a facial line, drawn from this last point to the naso-frontal suture; a base line, drawn from this suture back to the lowest point of the condyloid process; a coronal line, through the highest point of the crown parallel to the horizontal line; and an occipital line, through the most posterior point of the occiput parallel to the facial line. The angle formed by the coronal and prolonged facial lines approaches more and more to a right angle as the skull approximates the human form. The angle formed between the base and facial lines is, in the human skull, always obtuse. The relation of skull to face is indicated by the base line. The triangle, composed of the facial, base, and horizontal lines, shows the general figure of the face; while from the coronal and occipital, together with the prolonged horizontal and facial lines, we derive some idea of the configuration of the skull.‡ Okens's *lineæ craniometricæ* consist of the Camperian facial, and horizontal lines and the occipital line of Daubenton. These lines are prolonged till they intersect, and the angles then measured.§ Ward suggests the following as an approximative method of

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* De Humani Corp. fabr. (Edit. van der Linden, Amstelod. 1645, fol. p. 16.)

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* Ideen zur Philosophie der Geschichte der Menscheit, 4 Buch.

† J. E. Doornik wijsgeerig natuurkundig onderzoek aangaande den oorspronglijken mensch en de oorspronglike stammen van deszelfs geslacht. Amsterdam, 1828.

‡ Cephalogenesis. Monachii, 1815.

§ Lehrbuch der Zoologie, 2 Abtheilung, S. 660. Many of these early craniometrical methods have been compiled by Wiedemann and Crull, but the reader will find the most complete account of them in the elaborate work of Drs. Pierer and Choulant, entitled "Anatomisch-Physiologisches Realwörterbuch zu umfassender Kenntniss der körperlichen und geistigen Natur des Menschen im gesunden Zustande. Herausgegeben von Dr. J. F. Pierer und Dr. L. Choulant." Vierter Band, Leipzig, 1821, pp. 519–29.*

"Es sind," writes Choulant, in commenting upon these methods, "hierzu so viel Bestimmungen dieser Art willkommen, als nur immer mit Geist und Sachkenntniss erfunden werden mögen; denn jede derselben wird neue, viellicht übersehene oder ungekannte verhältnisse im Baue des Schädels aufdecken, welche für den sorgfältigen Naturforscher von grosser Wichtigkeit sind, und zu den erfreulichsten Entdeckungen führen Können. Jeder Schädel erhält dadurch, dass er von so man-

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* I am indebted to Prof. Robley Dunglison for the opportunity of consulting a copy of this work.

estimating the proportions of the skull in different races of men: "Carry a line (*a b*) from the occipital tuberosity to the root of the nose, (*i.e.* the centre of the naso-frontal suture;) meet this behind by a prolongation of the axis of the vertebral foramen, (*d f;*) in front by the line (*a c*) representing the profile of the nose. The angles *d f a* and *f a c*, thus formed, indicate the sudden bends of the deuto-vertebral column in this region. Lastly, draw the facial line (*a c*) from the root of the nose to the prominence of the upper jaw, so as to form a third angle, (*f a e.*) The difference between the angles *f a e* and *f a c* indicates the relative position of the nose and upper jaw. As these three angles, *d f a*, *f a c*, and *f a e*, become less obtuse, and as the difference between the second and third increases by the recession of the upper jaw, the proportions of the head improve, and its form approaches ideal perfection."* Dumoutier determines the volume and form of the cranium by three planes: one, horizontal, passing through the zygomatic arches; another, vertical, passing through the centres of the external meati; and the third, antero-posterior and also vertical, passing through the longitudinal sinus and the falx major. The intersection of these three planes gives him a transverse diameter, which he names *auditory*, and which is situated in the horizontal zygomatic plane, above the centre of the external meatus, and a vertical diameter erected upon the middle of the auditory. He also adds an antero-posterior and a transverse diameter corresponding to the middle of the vertical diameter.† The measures here proposed have led Volkoff to attempt the determination of the volume of the brain by means of an imaginary parallelopipedon circumscribing the cranium.‡ Engel divides

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nigsachen Seiten betrachtet und vielseitig genau bestimmt wird, eine sichere Diagnose, durch die er auch für den, der ihn nicht selbst sehen kann, völlig brauchbar zu anthropologischen Forschungen wird. Möchten alle, denen grössere Schädelsammlungen zu Gehote stehen, dieselben nach den mannigsachsten, nur zum Theil hier angegebenen, Verhältnissen genau bestimmen und wenigstens diese Verhältnisse bekannt machen. Sie könnten uns, durch eine gute Beschreibung untestutzt, sehr oft statt der Abbildungen genügen. Möchten Männer, denen strenge Forschung nicht fremd ist, und, wie leider so vielen jetzt verachtlich dünkt, sich dieses Gegenstandes einmal mit besonderer Liebe annehmen. Die Naturgeschichte des menschen, in der jetzt, ausser den schätzbaren Blumenbachsen Arbeiten, lange nichts Erspriessliches geliestet worden ist, würde davon die herrlichsten Früchte geniessen, und wo gibt es ein wichtigeres Studium für den Menschen, als der mensch selbst?" Pages 529–30.

* Human Osteology, p. 149.

† Notice sur l'Épaisseur du Crâne Humaine. Par M. S. de Volkoff, p. 5. Dumoutier has invented a cephalometer, which he figures in his Atlas, (Plates 48 and 49,) but gives no description of it. See Voyage au Pole Sud et dans l'Océanie. etc. Anthropologie, Paris, 1854, pp. 254–55.

‡ Ibid., pp. 5–6.

the skull by an imaginary vertical plane passing through the median line from before backward. In this plane, which he calls the *main profile section,* lie the anterior and posterior points of the foramen magnum, the superior angle of the occipital bone, and the centres of the anterior fontanelle and nasal suture. These points are next connected by straight lines, which are respectively called the long axis of the great foramen, the chord or height of the occipital bone, the chord of the parietal bones, the vertical chord or height of the frontal bone, and the posterior facial line. An irregular pentagon is thus formed, the sides and angles of which are carefully measured.* Dr. Hueck, in his excellent thesis upon the Esthonian skull, adopts the ordinary measurements of the cranium, viz.: the length, breadth, and heighth of the skull; breadth of the forehead; distance between the external margins of the orbits; distance between the malar bones; greatest breadth of the face; vertical diameter of the orbits; length and breadth of the hard palate, etc.†

According to Carus, in estimating the form and dimensions of the head, we must remember that in the three cranial vertebræ there are positive indications of the three essential faculties of the soul, viz.: will, sentiment, and intelligence; that each of these vertebræ bears a definite relation to a certain portion of the brain; that mental tendencies and the will are clearly indicated by the posterior or occipital vertebra; vegetative life and sentiment by the intermediate vertebra; acuteness of sense and intelligence by the anterior or frontal vertebra; and that the development of the vertebral bones composing the nose, the orbits and auricular apparatus is always remarkably significant not only of the development and preponderance of the senses of smell, vision, and hearing, but also of the influence of these organs upon the psychical individuality of man. All methods of portraying and measuring heads, he thinks, therefore, should conform to the anatomical peculiarities and relations of these three regions.‡

Dr. Vimont directs his attention to the frontal bone, and "uses an ingenious comparative method to exhibit the differences" presented by this bone in the various races of men. He projects a uniform square of lines as large as the largest frontal bone, divided by cross lines into nine equal panels, numbered over each frontal bone set upon its orbital edge.* Pucheran† and Maslieurat Lagémard‡ have also endeavored to find in the conformation of the frontal and superior maxillary bones characteristic distinctions between the races of men; while Sœmmerring, Berard, and Dubreuil§ have sought for ethnic peculiarities in the form and situation of the foramen magnum.

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* Untersuchungen über Schädelformen. Von Dr. Joseph Engel. Prag, 1851, p. 11.

† De Craniis Estonum Commentatio Anthropologica, etc., p. 13.

‡ Atlas der Cranioscopie, oder Abbildungen der Schædel- und Antlitzformen beruehmter, oder sonst murkwuerdiger Personen. Von Dr. Carl Gustav Carus. Leipzig, 1843. Heft I., Introduction. See also Grundzüge einer neuen und wissenschaftlich begründeter Cranioscopie, (Schædellehre.) Von Dr. C. G. Carus. Stuttgart, 1841.

Chavee is satisfied with estimating the capacity of the frontal region by taking the mean of the four following measurements: From one external meatus to the other, over—1st, the superciliary ridges; 2d, above the frontal sinus; 3d, over the frontal protuberances; and 4th, over the anterior fontanelle.‖ Dr. Gosse, of Geneva, in his classical monograph on cranial deformations, adopts the ordinary measurements of the skull. He proposes, however, a peculiar method of viewing crania, in order to determine whether they be natural or deformed. The skull, deprived of the lower jaw, is placed upon a horizontal surface in such a manner that it rests upon the incisor teeth and mastoid processes. While in this position a perpendicular line is let fall from the junction of the coronal and sagittal sutures to the base. If this perpendicular line cuts the basis cranii on a line with the external auditory meatus, the skull is normal; if it falls in advance of, or behind this canal, it is deformed either accidentally or artificially.¶

The cephalic triangle of Deschamps is both ethnological and physiological in its indications. It is constructed as follows: A vertical or facial line is first drawn from a point two centimetres above the nasal protuberance, so as to avoid the frontal sinus, and made to terminate on a level with and below the symphysis menti. From this point on the forehead a line is carried to the external occipital protuberance, measuring the occipito-frontal diameter. The third line is formed by joining the point on the occiput with that at the mental symphysis. This is the occipito-mental diameter of obstetricians. In the triangle formed by these three lines, there are three fixed bony points, three sides of known length, and three angles whose values are easily determined by reference to the simplest principles of geometry. Deschamps claims for each of these angles a particular significance. Thus the facial angle, comprised between the vertical and oblique lines, indicates the degree of development of the face and of the senses pertaining to vegetative life; the coronal or cerebral angle, comprised between the facial and horizontal lines, indicates more exactly than in the method of Camper, the volume of the cerebrum—the seat of intelligence; the occipital or cerebellar angle, comprised between the horizontal and oblique lines, indicates the degree of development of the cerebellum, the reputed co-ordinator of motion.*

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* Traité de Phrenologie, Planche 109. See also Crania Britannica, Decade i. p. 28.

† Considerations anatomiques sur les Formes de la Tête osseuse dans les Races Humaines. Thèse pour le Doctorat en Médecine. Par Jacques Pucheran. Paris, 1841.

‡ De l'Influence du maxillaire supérieur dans la conformation de la Face, et de ses différences dans les Races Humaines. Bull. de la Société Anatomique de Paris. 1840.

§ Études anatomiques de têtes ayant appartenu à des individus de Races Humaines diverses. Comptes Rendus des Séances de l'Academie des Sciences. Paris, 1837, t. iv. p. 575.

‖ De la Pluralité des Races Humaines. Par Georges Pouchet. Paris, 1858, p. 183.

¶ Essai sur les Déformations Artificielles du Crâne. Paris, 1855, p. 7.

The parietal angle of Quatrefages is formed by two lines, each drawn from the most prominent lateral points of the zygomatic arch to the coronal suture immediately above, and prolonged till they meet. Prichard, long ago, called attention to the importance of this angle as a means of distinguishing the races of men, but he demonstrated no method by which it could be measured. Quatrefages has invented an instrument by which this measurement may be successfully accomplished.†

To Drs. Scherzer and Schwarz, who were attached to the recent Austrian Circumnavigatory Expedition, we are indebted for an elaborate system of measurements, applicable to the head, trunk, and extremities of man. They record the age, weight, height, strength, color of the hair and eyes, and number of pulsations of the radial artery, and then take 31 dimensions (consisting of superficial distances, diameters, circumferences, etc.) of the head, 18 of the trunk, and 21 of the extremities.‡ By the extensive practical application of this metrical system they hope to obtain the data upon which to establish a natural classification of the races of men. In this hope they were, in a measure, countenanced by the late Baron Von Humboldt, who thought that we might at length arrive at a safer result in distinguishing and determining human races by this than by any other means.§

It is impossible within the limits of this brief historical survey of the literature of craniometry to dwell upon all the various methods which have, from time to time, been promulgated by different craniographers. In addition to the works noticed above, the reader is referred for valuable information concerning the measurement of the skull to the writings of Burmeister,* Van der Hoeven,† Lucae,‡ Retzius,§ Zeising,|| Stahl,¶ Gratiolet,** Silbermann,†† and Segond.‡‡ In the work of Deschamps, already cited, will be found a brief account of the craniometrical methods advocated by Flourens, Garnot, Laurillard, the Abbé Frere, and others.

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* Études des Races Humaines. Paris, 1857–59, p. 101.

† Sur l'angle pariétal et sur un goniomètre destiné à le mesurer. Par M. A. de Quatrefages. Comptes Rendus des Séances de l'Académie des Sciences, t. xlvi. p. 791.

‡ On measurements as a diagnostic means for distinguishing the Human Races. By Karl Scherzer, Ph. D., and Eduard Schwarz, M.D. On board H. I. R. M.'s Frigate "Novara," Port Jackson, 1858.

§ See a notice of the above measurements contributed by J. Barnard Davis to Silliman's American Journal for Science and Art, May, 1860, p. 332.

A careful examination of the various methods of measuring the skull, just passed in review, will show that many of them fail of meeting the requirements of the craniographer because of their really limited application. More is claimed for them than they can accomplish. Though useful in pointing out certain characteristic features, they take no account of others equally, perhaps more, important. Some of them are based upon erroneous views of the relationship of the different portions of the skull to each other. Others are simply impracticable attempts to measure a solid by taking the inclination to each other of two of its planes, or by estimating the area of a systematic section, which area, as Broc has justly remarked, may serve as the base of solids having different volumes. It is very doubtful whether any technical method heretofore invented, such as Camper's or Blumenbach's, etc., or that may yet be originated, can take

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* The Comparative Anatomy and Psychology of the African Negro. By Hermann Burmeister. Translated from the German by Drs. Friedlander and Tomes. New York, 1853. This is a translation of one chapter of Burmeister's "Geologische Bilder," and embodies the results of his studies upon the Natural History of the African.

† Tijdschrift voor Nat. Geschiedenis en Physiologie, I., 1835, pp. 362–371. See also Annales des Sciences Naturelles. Sec. Série, t. viii., 1837, Zoologie, pp. 116–124.

‡ Zur organischen Formenlehre. Von Dr. J. C. G. Lucae. Frankfurt-am-Main, 1844; also, Zur Architectur des Menschenschädels nebst geometrischen Originalzeichnungen von Schädeln normaler und abnormer Form. Frankf.-a.-M., 1857.

§ British Association for the Advancement of Sciences, 1847.

|| Proportionslehre des menschlichens Körper. Leipzig, 1854.

¶ Einige Klinische Studien über Schädel-Difformitäten. Von F. K. Stahl. Zeitschrift für Psychiatrie, 1855.

** Mém. sur le développement de la forme du crâne de l'homme et sur quelques variations qu'on observe dans la marche de l'ossification de ses sutures. Gazette médicale de Paris, 1856, No. 37, p. 578.

†† Mesures naturelles du corps humain. Gaz. méd., 1856, No. 12, p. 180; 1857, No. 1, p. 16.

‡‡ Procédé de mensuration de la tête, applicable à tous les vertébres et destiné à découvrir la loi des modifications réciproques entre la face et la crâne, soit dans une même espèce, suivant l'âge, le sexe, les variétés, soit d'une espèce à une autre. Gaz. méd., 1857, No. 1, p. 21.

the place of a careful and extensive series of linear and spherical measurements, both absolute and comparative, projected from prominent and well selected points. The little reliance to be placed upon any of these methods becomes very evident when we subject them to the experimentum crucis of practical trial. In proof of this statement we have only to examine critically a few of the more celebrated craniometrical formulæ proposed and advocated by different observers.

Camper, for example, thought that "the basis on which the distinction of nations is founded may be displayed by two straight lines; one of which is to be drawn through the meatus auditorius to the base of the nose, (horizontal line,) and the other touching the prominent centre of the forehead, and falling thence on the most advancing part of the upper jawbone, (facial line,) the head being viewed in profile. In the angle produced by these two lines consist, he thought, not only the distinctions between the skulls of the several species of animals, but those also which are found to exist between different nations."

The facial line of Camper merely determines the inclination of the face as compared with the forehead; the facial angle measures the degree of prominence of the superior maxillary. Neither facial line nor angle can be relied upon as a measure of the relative size and perfection of the head and face; still less can they be regarded as the indices of intellectual power, for they furnish us with no information concerning the form and capacity of the calvaria. The relative breadth of face is entirely overlooked. The inclination of the facial line is regulated by the prominence of the upper jaw and the frontal sinuses, and not by the form of the head. To render this line a standard one for comparison of skulls, it should always be drawn between fixed points—the centre of the glabella, for example, and the most prominent point of the upper jaw between the alveoli of the two incisors. Now, if the reader will refer to the plates of Camper's work, he will perceive at once that while in some heads the glabella is the most prominent point of the frontal region, or, in other words, approaches nearest the perpendicular passing through the nasal spine, in others it is not more, and sometimes even less, prominent, than a portion of the os frontis directly above it. The reason of this is obvious. In the crania of some of the inferior races of men, as the woolly-haired, typical negro, the Caribs, etc., the flat os frontis retreats rapidly from the glabella; in the higher races—the so-called Caucasian—the brow rises almost vertically over the glabella, so that the facial line prolonged from the latter point touches the central part of the forehead in the median line. In these latter cases the facial angle records to a slight extent the prominence of the forehead (which is the bony indication of the anterior development of the cerebrum) as compared with the prominence of the upper jaw. In the former examples, however, the plane of the retreating brow cannot be brought within the inclination of the facial line, and no record can, therefore, be made of anterior cerebral development. If it be resolved, on the other hand, to abandon the glabella, and let the upper end of the facial line fall upon the *most prominent point* of the os frontis, wherever that may be, then, inasmuch as this point does not occupy the same location in different skulls, it will readily be seen that, in the attempt to include the facial and calvarial indications in the facial angle, we deprive it of all utility by rendering it no longer a method of comparative measurement.

To determine the value of this facial line, a horizontal line, as is well known, was drawn by Camper through the external auditory meatus to the base of the nose. Dr. Morton, in making his measurements with his facial goniometer, "uniformly carried this line to the nasal spine, above and between the roots of the two front incisor teeth."* Any one who is accustomed to observe crania knows very well that in different skulls it often happens that, while the distance between the meatus and the centre of the naso-frontal suture remains the same, the distance between this latter point and the nasal spine varies; in other words, the height of the face seems often to vary independently of the length of the skull. But very obviously, any variation in the position of the nasal spine must alter sensibly the facial angle. Depression of the spine will render the angle more acute, elevation of it will make the angle approach a right angle. In fact, the only fixed point in the two lines is the external meatus, which, as a point of departure in the comparative mensuration of the skull, is of the first importance.

The Camperian method entirely overlooks the breadth of the face. Crania of different races, differing completely in their osteological characters, have the same facial angle, while others of the same race, resembling each other closely in bony characters, differ much in this angle. This was long ago shown by Blumenbach in his *Decades Craniorum*, in the case of certain negro and Polish skulls, and has been verified by almost every craniographer since his time.

The different methods employed by different observers to measure the facial angle prevent the results of their experiments from being comparable with each other. To measure this angle with unerring mathematical precision, an accurate photographic outline of the head in a lateral view should, as I have elsewhere said,* be first obtained; upon this figure the facial and horizontal lines of Camper should next be drawn, and the angle then measured with a finely-graduated protractor. This was essentially the method employed by Camper, and quite recently, according to Deschamps, by M. Rosseau, of the Museum d'Histoire Naturelle, who accompanied the expedition of Prince Napoleon to the Polar Circle.† Morton made use of the facial goniometer, described in *Crania Americana*, an instrument not to be relied upon, since, in different but equally careful hands, it is very liable to yield different results for the same head. Cuvier and Geoffroy St. Hilaire ascertained the facial angle by the following method: the external auricular orifices are connected with a line, and upon this, as a base, is erected an isosceles triangle, the sides of which are formed by a line drawn from the external auditory meatus to the edge of the incisors. A perpendicular is then let fall from the apex to the base. Another isosceles triangle is constructed upon the same base, having for its sides the distance from the auricular orifice to the most prominent point of the forehead. The summit of this triangle is also connected with the base by a vertical line. A third triangle is next formed upon the perpendicular of the first isosceles triangle, the sides being formed by the distance from the incisors to the most projecting point of the os frontis and the perpendicular of the second triangle respectively. The angle comprised between the first two of these three lines is the facial angle.‡ To determine this angle Jacquart proposes to construct a triangle the sides of which are formed as follows: 1st, by a line drawn from the middle of the external meatus to the edge of the incisors; 2d, by a line extending from the edge of the incisors to the most prominent point of the forehead; 3d, by a line falling from this point to the external auditory orifice. The angle comprised between the first two lines gives the facial angle of Camper.§ Dr. Schnepf employs the following measurements in order to determine the facial angle: with a cephalometer he measures the distance—1st, from the point of intersection of the two depressions which limit the tragus before and above to the depression of the lower lip under the nasal spine; 2d, from the first of these two points to the naso-frontal depression; and 3d, from this latter point to the depression below the nasal spine. Knowing the dimensions and inclination to each other of the three sides of the triangle thus formed, he calculates the value of the facial angle by means of a simple trigonometrical formula approved by the mathematician Blanchet.*

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* Crania Americana, p. 250. J. Cloquet, in order to take into account any accidental prominence of the superior maxilla and teeth below the nasal spine, causes the facial and horizontal lines to meet at the level of the upper teeth. To obtain a still more exact measurement of the extent of the face, Deschamps proposes to prolong both lines to the symphysis menti. (See Études des Races Humaines. Methode naturelle d'Ethnologie. Par Michael-Hyacinthe Deschamps. Paris, 1857. pp. 96.)

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* See "Cranial Characteristics of the Races of Man," in Indigenous Races of the Earth, p. 256.

† Études des Races Humaines, p. 99.

‡ Magasin Encyclopédique, 1ère année, t. iii. p. 459.

§ Mémoire sur la Mensuration de l'Angle Facial. Comptes Rendus des Séances et Mémoires de la Société de Biologie, 1856, p. 60.

From these observations, it will be seen that the Camperian lines and angles are *per se* of but little value to the craniographer.

Blumenbach, after commenting, in his essay *De Generis Humani Varietate Nativa,* upon the method of Camper, proposed his *norma verticalis,* which consists, as is well known, in resting the cranium upon its base and looking down vertically upon the vault; thus observing how far the maxillæ project beyond the frontal arch, the direction of the jaws and cheek-bones, the proportional breadth or narrowness of the head, etc.

A little reflection will show that this method is not much more useful in determining the differential characters of skulls than the preceding. It is based, in fact, upon essentially the same erroneous hypothesis that misled both Camper and Daubenton—an hypothesis whose fallacy, though apparently not wholly unknown to Durer, was first clearly pointed out by Bell. Blumenbach merely attempted to demonstrate the fundamental idea of his predecessors—the relation of face to head proper—by viewing the head perpendicularly instead of laterally. By so doing he introduced into his plates two important features—the coronal outline and breadth of face—and thus made a decided advance in craniography. The configuration of the crown differs very much in the different races of men, and should, therefore, be always considered in the ethnographic comparison of crania. But the comparison of skulls in a lateral or profile view is equally important; for this view comprehends many important points, all of which were lost sight of by Blumenbach in consequence of his entire repudiation of the Camperian method. In comparing skulls according to the Blumenbachian system, it is obvious, as Bell has said, "that we cannot see the depth of the bones of the face, nor of the cranium, and consequently we cannot observe the proportions which the area of the bones of the face has to that of the cranium."†

The illustrious Cuvier turned his attention to this subject but only to fall into the same fundamental error. His method, which is but a modification of Doornik's incisivo-occipital line, is pronounced by Bell to be indeed, "extravagantly incorrect." He divided the bones of the head into the calvarial and facial parts. The calvarial bones inclosing the brain are the osseous representatives of intellectual and moral man; the bones of the face lodge the organs of vision, smell, and taste, and are, therefore, the representatives of sensual man. "A large cranium and a small face," he observes, "indicate a large brain, and organs of smell and taste but slightly developed; a small skull and large face, on the contrary, indicate a less voluminous brain, and more perfectly developed olfactory and gustatory organs." Cuvier appears to have thought, furthermore, that the animal is, to a great extent, what it is in virtue of two great functions especially—digestion and generation—both organic, but the one individual in its relations, and the other specific. "La nature," he says, "de chaque animal dépend en grand partie de l'énergie relative de chacune de ses fonctions; il est, pour ainsi dire, entrainé et maitrisé par celle de ses sensations qui sont les plus fortes. * * * * La proportion respective du crâne et de la face indiquant immédiatement celle du cerveau, avec deux des principaux organes extérieurs, est donc aussi un indice du plus ou moins de perfection des facultés intérieures comparées avec les extérieures. Mais il y a une considération de plus qui ajoute à son importance comme indice: c'est que les deux sens en question sont ceux qui agissent sur les animaux avec le plus de force; ceux qui les maitrisent le plus puissamment, à cause de l'énergie que deux des besoins les plus pressants, la faim et l'amour, communiquent à leurs impressions. Les actions auxquelles ces besoins déterminent sont aussi celles dans lesquelles il entre le plus d'aveugle fureur, le plus de brutalité, s'il est peronis de s'exprimer ainsi, lorsqu'il ne s'agit pas de l'homme."*

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* Mensuration de l'Angle Facial. Gazette Médicale, 1856, No. 48, p. 752.

† Essays on the Anatomy and Philosophy of Expression. By Charles Bell. 2d edit., London, 1824, pp. 151–2.

He next premised that the sense of hunger and the degree of development of the organ of taste were, respectively, the subjective and objective indications of the nature and power of the digestive function, and that, in like manner, the organ of smell and the sexual desire were the external and internal expressions of the reproductive power. It is somewhat singular to observe that Cuvier regarded these premises as facts, whereas they are, in reality, imperfect deductions from that great and truly philosophical principle in comparative anatomy—the correlation of parts—which he did so much to develop, and in the enunciation of which, although so wedded to his doctrine of the immutability of species, and so eminently great in calm and cautious detail, he approached nearest to Gœthe and Geoffroy Saint Hilaire, the great leaders of the transcendental school, and two of the profoundest thinkers that ever lived. Cuvier's next step was a strictly logical one, one that would have occurred to any thinking mind. He announced that the relation between the bones which support the organs of sense and those which contain the organs of mind, expresses the relation which the sensual bear to the intellectual powers of man.

So far Cuvier was correct. The steps of his argument were logically successive, and were all referable to the great principle in comparative anatomy to which allusion has just been made. Beyond this his critical acumen deserted him, and he signally failed in his final conclusions. The bones of the face contain the orbits, the nasal and buccal cavities, and these lodge respectively the organs of vision, smell, and taste. Now Cuvier thought that the prominence of the ossa nasi and the magnitude of the maxilla bore a fixed relation to the degree of perfection of the organs of smell and taste. Here was his great error. In attempting to contrast the *size* of a bone with the *perfection* of the organ it supported, he was really comparing things which in their very nature are incomparable. It was the old error, in fact, handed down by Galen, and not yet wholly eradicated from the schools and the books—the error of attempting to deduce physiological laws and principles from structure alone. The perfection of an organ depends not upon its size alone, but still more upon its weight, its density, and especially its quality, its chemical and physical composition, the arrangement of its ultimate particles, etc. These are all associated elements which do not admit of separation. The attempt to separate them is followed, to a greater or less extent, by inaccurate results, as shown in the example under consideration. The nervous centre of the sense of vision is the tubercula quadrigemina, and these communicate with the globe of the eye through the optic nerves and retina, which constitute the so-called vital part of the visual apparatus. To determine the organic relations of the bony orbits to this part, we must first ascertain the structural relations existing between the optic nerves and retina on the one hand, and the aqueous and vitreous humors, crystalline lens, etc., on the other, and finally the relations of these latter parts to the bony orbits themselves. In the case of the organ of smell the same remarks apply to the olfactory ganglia and commissures, the cribriform plate of the ethmoid, the distribution of the olfactory filaments, the arrangement of the Schneiderian mucous membrane, and the prominence and form of the nasal bones. With regard to the sense of taste we must study the relations existing between the gustatory nerves, the size, form, and structure of the circumvallate and fungiform papillæ of the tongue, the tongue itself, and the maxillæ.

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* Leçons d'Anatomie Comparée, 2e edit., t. ii. p. 160.

As early as 1809 the attention of Sir Charles Bell was directed to this subject by a remark of Dr. Wm. Gibson, late Professor of Surgery in the University of Pennsylvania, and at that time a student of medicine in Edinburgh. Sir Charles informs us that Dr. Gibson "placed before him the skull of a European and of a negro, and resting them both on the condyles of the occipital bone, it appeared that the European fell forward and the African backward."* This struck him as remarkable, when both physiologists and physiognomists were describing the greater comparative size of the face as the grand peculiarity of the African head. He proceeded, therefore, to investigate the matter. He selected a number of crania and divided their great convexities into degrees or equal parts, from the nasal suture to the posterior margin of the great occipital foramen. He then poised these skulls, one after the other, upon an iron rod introduced through the foramen magnum and held perpendicularly in such a manner that while the upper end or point of the rod rested against the internal surface of the vault of the cranium in the median line, the rod passed out of the foramen exactly between the condyles of the occipital bone, that is, at the point on which the head naturally rests. Confirmatory of the observation of Prof. Gibson, Bell found that in consequence of the backward inclination of the negro skull, and the forward inclination of the European cranium, the point of the rod in the former touched the inside of the cranium several degrees nearer to the bones of the face, or more forward on the skull, than in the latter. The direction of the rod, it will be seen, coincides with a perpendicular line drawn through the skull, and bearing the same relation to the bones of the calvaria that the facial line of Camper does to the bones of the face. Hence the angle formed by these two lines is a better measure of the relation of the face to the head than the old facial angle, which, in reality, only measured the inclination of the face. "We have now," writes Bell, "an explanation of the peculiarity in the position of the negro head; the upward inclination of the face, and the falling back of the head. And here, too, we have it proved that it is an error to suppose the negro head to be remarkable in character on account of any increase in the proportion of the bones of

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* "Si cranium Nigritæ," writes Dr. Gibson, in his inaugural essay presented for the Doctorate, "super tabulam collocatum fuerit, maxilla inferiore amota, super

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basin occipitis ita innitetur, ut maxilla superior tabulam haud attingeret. E contrario, quando caput Europæi super tabulam locatum est, antrorsum fertur, et super dentes incisores maxillæ superioris restat." (Dissertatio Physica Inauguralis de Forma Ossium Gentilitia, Edinburgi, 1809, p. 25.)

Whether this observation was independently made by Dr. Gibson I cannot say. Certainly Sœmmering observed the fact, and announced it in his celebrated work published in 1785, in the following words:—

"Vermuthlich ist dieses mit die Ursache, dass, wenn man einen Mohrenschædel ohne Unterkinnlade auf eine ebne Fläche legt, er so sehr hinten aufliegt, dass die Zähne die Fläche nicht berühren, sondern um mehr als eine Linie höher gehoben werden.

"Europäische Schädel von der gewöhnlichen Form und aus dem besten Alter neigen sich meist allemal nach vorne, und ruhen eben so gut auf den Zähnen, als hinten auf. Ich weiss nicht, ob jemand diese Beobachtung vor mir gemacht habe; obgleich dies nicht alle Mohrenschädel thun." (Ueber die Körperliche Verschiedenheit des Negers vom Europäer. Frankfurt und Mainz, 1785, p. 55, § 52.) He attributes this difference to the different position of the foramen magnum and condyloid processes of the os occipitis in the two races. (P. 18, § 14.)

the face, to the area of the cranium, for the *area of the bones of the face is in this way shown to bear a proportion to the area of the bones in the cranium, less in the negro than in the European head.*

"My next object of inquiry," continues Bell, "was to find on what the distinctive character of the negro face really depends. For to the eye the *negro face appears larger, while in fact it is proved to be smaller*, than the European, considered in relation to the cranium. I took off the lower jaw-bones from both the European and the negro skull; and then, in order to poise the skulls on the perpendicular rod, it was necessary to move them *forward* on the point of the rod; but it was necessary to shift the negro skull considerably *farther* forward than the European: the point of the rod thus indicating by its removal backward on the scale that *the lower jaw of the negro bore a greater proportion to the skull than that of the European.* The facial line was of course thrown farther backward in both skulls on taking away the jaw; but the jaw of the negro being larger than that of the European, the inclination backward was greater in the negro skull. On proceeding to take away the upper jaws, and then the whole bones of the face, I found by the index on the degrees marked on the surface of the cranium, *that the jaw-bones of the negro bore a much greater proportion to the head and the other bones of the face, than those of the European skull; and that the apparent size of the bones of the negro face proceeded only from the size and form of the jaw-bones, while the upper bones of the face, and indeed all that had not relation to the teeth and mastication, were less than those of the European skull.*"

If the reader will but compare together the sentences which I have designedly italicised, and remember at the same time the important fact (seemingly wholly lost sight of by the author under notice) that the jaw-bones constitute nearly the whole of the face, he will become aware of the remarkable manner in which Bell so effectually refutes his own conclusions; for the facial bones concerned in this ethnographic question are the ossa nasi, malares, and maxillæ superior et inferior. Of these, the two maxillæ constitute by far the greater part both by size and weight. And even the malar bones are associated with the maxillæ in giving the undue size to the negro face, since the temporal muscles concerned in the movement of the jaw in the act of mastication influence in the course of their development the size of the malar bones; and as the size of this muscle corresponds to the size and weight of the jaw to which it is attached, it must be evident that the malar bones, or at least that portion of them which enters into the formation of the zygomatic arch, must correspond in form and size to the maxillæ. To be convinced of this we have but to compare the human skull with that of an herbivorous animal on the one hand, and that of a carnivorous animal on the other; the horse and lion, or bull and tiger, or sheep and dog, etc.

In the course of his investigations, Bell found that "the angle formed betwixt the perpendicular and a line drawn from the occipital hole to the superior margin of the orbit of the eye served the most distinctly to mark the variations in the inclination of the cranium." When he poised juvenile human crania of the European race upon the rod above mentioned, he found this occipito-orbital or base line of the calvaria more elevated than in adult heads of the same race, owing to the diminished size and weight of the forehead of the former. One of the most striking peculiarities of the infantile cranium is the flatness of the frontal region. As the child advances in years, and at length arrives to manhood, this flatness gradually disappears, and at last gives place to the full, rounded arch so characteristic of the higher cranial types. In the adult negro cranium this flatness being a permanent feature argues inferiority and immaturity. We are not surprised, therefore, to learn from Bell that in the negro skull the base line, as in the case of crania of white children, was much elevated—nearly ten degrees more, in fact, than in the European adult.

In summing up his experiments Bell was forced to conclude "that the relative capacity of the cranium or brain-case to that of the face, as containing the organs of the senses, is insufficient to mark the scale of intellect, or to explain the distinctions of character in the human head; that the growth of the cranium and of its contents, with the development of the faculties of the mind, is attended with a change in the shape and capacity of the fore and upper part of the cranium, in comparison with that of its back part and base; that the perfection of the human head greatly consists in the increase of the cranium forward, in the full and capacious forehead; and that the cranium of the negro, when compared with the perfect cranium of a European, has less of capacity on the fore part."

The fallacious nature of some, at least, of the above methods of skull-measurement, and the impropriety of relying upon them exclusively in our attempts to elucidate the problems of craniography, become very apparent when we consider the number and relation of the cranial bones, the numerous points of ossification which they present, and the inequality of different parts of the head in respect to the rate and extent of the ossifying process. Indeed, in view of the almost endless variations in conformation, magnitude, etc. of skulls, it would at first sight seem almost impossible to invent any metrical system by which they could be successfully compared.

In the examination and classification of his large collection of crania, Blumenbach long ago experienced this difficulty, and expressed himself in positive terms concerning it. Singularly enough, too, that remarkable man, Bernard Palissy, the potter and physicist, writing in the latter part of the sixteenth century, says very positively, in reference to cranial measurements, "Je n'y sceu iamais trouver une mesure asseurée."*

A great difficulty exists in the want of accurately-determined points from which to commence our measurements. The sutures themselves seem to be beyond all mathematical laws, while the general structure of the head is such that apparently insignificant variations in certain points are greatly magnified in their results. In a structure seemingly so irregular as a whole, therefore, and so varied as regards those points which in the main constitute national and typical characteristics, instead of relying upon one, or even a few, many judicious comparative methods are required to elicit the truth and eliminate errors otherwise unavoidable. If all things in nature be governed, as Moschus of Sidon affirmed, by measure, number, and weight, it follows that the metrical laws which govern the development of the cranial bones must express themselves in their ultimate form, and need only a certain careful inquiry to find them out. "I feel convinced," says Professor Engel, "that even the size and form of the serrations of the sutures are not left to chance, but that they have recognizable causes. I even believe that an accurate examination of the form of the sutures will enable us to gain some information of the form-development of the skull."†

Dr. Morton, as above intimated, placed great stress upon measuring the internal capacity of the skull. Nevertheless, he did not rely upon this alone, but, with a better appreciation of the requirements of craniographical science, employed in his investigations an extended series of measurements. Messrs. Davis and Thurnam, in their valuable contribution to ethnology, the Crania Britannica, have adopted a series somewhat similar to those of Morton. But a careful examination of all these measurements convinces me that they are by no means unobjectionable. They are too few in number to comprehend the almost innumerable differentiæ which separate the various race-forms of the cranium; and they are also more absolute than comparative in their scope. Cranial measurements, to be of practical use, should be carefully taken with reference to certain fixed points, and should be both absolute and relative. Absolute measurements are necessary to demonstrate those anatomical differences between the crania of different races, which assume a great zoological significance in proportion to their constancy. By relative measurements of the head we obtain an approximate idea of the peculiar physiological character of the inclosed brain; for by such measurements we can determine, in a general manner, the proportion in volume existing between the cerebral lobes or hemispheres, the cerebellum, and the medulla oblongata—the three prominent portions of the encephalon. The craniographer should determine, therefore, both the absolute size or degree of development of the entire skull and the relative size or development of its different regions—these latter being selected with reference to the various parts or organs composing the encephalon. By such measurements, preliminary and essential as they are to the study of comparative craniography, the craniographer establishes an important anatomical foundation for the researches of the psychologist—the craniographer, in fact, becomes the cranioscopist.

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* "Quoy voyant, il me print envie de mesurer la teste d'un homme, pour scauoir directement ses mesures, et me sembla que la sauterelle, la reigle et le compas me seroient fort propres pour ceste affaire, mais quoy qu'il en soit, ie n'y sceu iamais trouver une mesure asseurée, parce que les folies qui estoient en la dite teste luy faisoient changer ses mesures. Adonc ie fus confus, parce que ie trouvois la dite teste tantost d'une sorte et tantost d'une autre, et combien qu'aucunes fois il y eust quelque apparence de lignes directes, ainsi que i'apprestais mes outils pour les figurer, soudain, et en un moment ie trouvois que les lignes directes s'estoient rendues obliques, dont ie fus fort estonné, voyant qu'il n'y avoit aucune ligne directe en la teste de l'homme, à cause que sa folie les faisoit toutes fleschir, et les rendoit obliques. Lors ie voulus scavoir quelles espèces de folie estoient en l'homme, qui le rendoit ainsi difforme, et mal-proportionné; mais ne le pouvant scavoir ni cognoistre par l'art de géometrie, ie m'avisoy de l'examiner par une philosophie alchimistale," etc. Œuvres, Paris, 1844, p. 93. Quoted from Pouchet's *Pluralité des Races Humaines*, pp. 185–6.

† Op. cit., p. 5.

In accordance with these views the following cranial measurements are suggested, in the belief that they will serve materially to facilitate the ethnographic study of the human skull.

CRANIAL MEASUREMENTS.

I. HEAD.

1. *Occipito-Frontal*, or *Longitudinal Diameter.*—From the glabella to the most distant point of the occiput, just above the external protuberance. As the situation of this latter point varies in different skulls, its distance from the superior angle of the os occipitis should be carefully noted. This diameter expresses approximately the length or greatest antero-posterior dimension of the cerebrum, or brain proper—the seat of the intellectual and moral faculties.*

2. *Frontal*, or *Anterior Transverse Diameter.*—Between the most

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*According to Mr. Stratton, the *average* length is expressed by the distance between the point of junction of the superior angle of the os occipitis with the sagittal suture and a point on the os frontis, in the median line, midway between the coronal and naso-frontal sutures. (*Contributions to the Mathematics of Phrenology*, p. 8.)

protuberant points of the os frontis, behind and above the external angular processes. This measurement gives the breadth of the anterior lobes of the cerebrum.

3. *Depth of the Supra-orbital Plates.*—Ascertained by passing a wire through the foramen lacerum orbitale, and catching the end, which is bent like a hook, against the sharp edge of the lesser wings of the sphenoid; the point of the wire which touches the supra-orbital notch is then marked with a pen, and the distance between this point and the bent extremity accurately measured. It is obvious that this diameter indicates the depth of the anterior lobes of the cerebrum.*

4. *Frontal Altitude.*—The head is so placed that the axis of the eye coincides with the plane of the horizon; one foot of a pair of callipers is then applied to the centre of the roof of the orbit, and the other made to rest upon the os frontis vertically over the first. The distance between these two points is the mean perpendicular height of the anterior lobes.

If we multiply together the 2d, 3d, and 4th diameters, we obtain an approximate measurement of the dimensions of the frontal or anterior cerebral region in cubic inches.

5. *Bi-Temporal*, or *Middle Transverse Diameter.*—The head being adjusted as above, one foot of the callipers is placed upon the most projecting point of the squamous suture, in a vertical line over the external meatus, while the other is applied to the corresponding point on the opposite side. The distance between these two points gives the breadth of the middle lobes of the cerebrum.

6. *Parietal Altitude*, or *Height of the Middle Lobes.*—Measured upon a wire passed through the foramen ovale of the sphenoidal bone to a point on the inner face of the parietal bone, directly over this foramen.

7. *Antero-Posterior Diameter*, or *Length of the Middle Lobes.*—From the anterior edge of the bony meatus, on a line with the zygoma, to a point on the temporal surface of the great wing of the sphenoid, just posterior to its malar edge.

If we multiply together the 6th and 7th diameters and the average breadth, we get the measurement of the middle region in cubic inches.

8. *Bi-Parietal Diameter.*—Between the parietal protuberances or ossific centres.

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* The celebrated phrenologist, George Combe, suggests a simple and expeditious method of ascertaining the length of the anterior cerebral lobes in living persons. It is briefly this: the head being held in such a position that the axis of the eye is parallel with the plane of the horizon, a perpendicular line is made to cross the most prominent point of the zygomatic arch—a point easily felt in the living head. The shortest distance between this line and the superciliary ridge of that side indicates the length of these lobes. (*Crania Americana. Appendix*, p. 279.)

9. *Posterior Transverse Diameter.*—Between the posterior inferior angles of the parietalia. These two diameters give the *breadth* of the posterior lobes of the cerebrum above and below. It will be seen that the *length* of these lobes (10) is readily obtained by subtracting the sum of the 3d and 7th diameters from the 1st.

If we add the 2d, 5th, 8th, and 9th diameters together, and divide the sum by 4, the quotient will be the *average breadth* of the cranium.

11. *Vertical Diameter,* or *Depth of Skull.*—Measured from the posterior edge of the foramen magnum to a point in the sagittal suture directly above. This measurement gives the vertical thickness of the cerebellar and posterior cerebral lobes together. The external occipital protuberance indicates very exactly the position of the tentorium which separates these two divisions of the encephalon. We may avail ourselves of this fact to obtain an approximate idea of the *height or vertical thickness of the cerebellum* (12)—the co-ordinating centre of muscular motion—in the following simple manner: Let two thin and narrow slips of brass be firmly united at their ends so as to form an exact right angle like a carpenter's square. The flat side of one of these slips should be graduated in inches and fractions of an inch. Rest the skull upon its coronal surface, and apply the brass square in such a manner that the edge of the graduated limb shall touch the occipital protuberance in the median line, while the edge of the other resting upon the base coincides with the long diameter of the foramen magnum. The reading on that part of the graduated slip in contact with the occipital protuberance is the measurement required. If now we subtract this last measurement from the 11th, we get the *thickness or perpendicular height of the posterior cerebral lobes,* (13.)

If we add together the 4th, 6th, and 11th diameters, and divide the sum by 3, we get the *average height* of the skull. A close approximation to the size of the cranium in cubic inches may be readily obtained by multiplying together the average length, height, and breadth.

14. *Occipito-Frontal Arch.*—With a graduated tape over the surface of the cranium, from the posterior margin of the foramen magnum to the centre of the naso-frontal suture.

15. *Frontal Arch.*—With the tape over the frontal bosses from one meatus to the other.

16. *Parietal Arch.*—With the tape from one meatus to the other, directly over the sagittal suture.

17. *Occipital Arch.*—With the tape over the occipital protuberance, from one meatus to the other.

18. *Horizontal Periphery.*—With the tape around the cranium, so as to touch the os frontis immediately above the superciliary ridges and most prominent point of the occipital bone.

The five preceding measurements enable us to compare different skulls together, in relation to their peripheral development, with more successful results than linear measurements alone.

19. *Meato-Frontal Diameter.*—With a pair of dividers, from the meatus to the frontal boss or centre of ossification.

20. *Meato-Parietal Diameter.*—From the meatus in a direct line to the parietal centre of ossification.

21. *Meato-Occipital Diameter.*—From the meatus to the point above the occipital protuberance, indicated in the 1st measurement.

II. HEAD AND FACE.

22. *Meato-Malar Diameter.*—From the meatus to the suture joining the malar and superior maxillary bones.

23. *Meato-Alveolar Diameter.*—From the meatus to the inferior edge of the superior alveolus in the median line.

24. *Meato-Mental Diameter.*—From the meatus to the symphysis menti.

The importance of the meatus, as a fixed and definite starting-point in the mensuration of the skull, is very evident from the above measurements. It constitutes an excellent landmark for the craniometrician, as is shown in the six diameters immediately preceding. These diameters, originating in a common centre, are strictly comparative, the three meato-calvarial or intellectual being contrasted with the three meato-facial or animal.

III. FACE.

25. *Naso-Alveolar Diameter.*—From the nasal suture to the alveolus of the superior maxillary.

26. *Naso-Mental Diameter*, or *Length of Face.*—From the nasal suture to the point of the chin.

27. *Bi-Zygomatic Diameter*, or *Breadth of Face.*—The distance in a right line between the most prominent points of the zygomæ.

28. *Depth of the Temporo-zygomatic Fossa.*—To be taken on a level with the upper margin of the zygomatic arch.

29. *Heighth*
30. *Breadth*
31. *Direction of the Transverse Axis*
32. *Shape*
} *of the anterior opening of the orbit.*

33. *Inter-Orbital Diameter*, or *Breadth of Nose at the Root.*—From one internal angular process of the os frontis to the other.

34. *Distance between the external angular processes.*

35. *Sub-Orbital Diameter*, or *Breadth of the Superior Maxilla.*—

From the inferior point of the maxillo-malar line of junction of one side, to the corresponding point on the other.

36. *Length of Nose.*—From the nasal suture to the spinous process of the superior maxilla.

37. *Breadth of the Nasal Orifice* at its widest part.

38. *Circumference of the Upper Jaw.*—With a graduated tape, over the alveolar margin of the upper jaw from one meatus to the other.

39. *Circumference of the Lower Jaw.*—With the tape from one meatus to the other, over the point of the chin.

IV. BASE.

40. *Inter-Auricular Diameter*, or *Breadth of the Base.*—Distance in a right line between the bony meati.

41. *Length* } *of the hard palate.*
42. *Depth* } *of the hard palate.*
43. *Breadth* } *of the hard palate.*

44. *Shape of the Superior Alveolar Arch.*

45. *Position of the Foramen Magnum.*—Determined by two measurements. *a.* From the anterior margin of the foramen to the incisor alveoli. *b.* From the posterior margin to the occiput, measured by means of the brass square above mentioned.

46. *Antero-Posterior* } *Diameters of the Foramen Magnum.*
47. *Transverse* } *Diameters of the Foramen Magnum.*

48. *Shape of the Foramen Magnum.*

Art. II.—*Reflections on Peculiar Circumstances connected with the Recent Occurrence of Exanthematic Typhus in Liverpool.* By Richard J. Dunglison, M.D.

Zymotic diseases are not objects of curious inquiry from their rarity, and it is only, therefore, when the phenomena associated with them present unusual features that we are led again to renew discussions which have long since convinced each side of the incontrovertibility of its own arguments. We could not now, for instance, take up with any show of novelty the theories and views of pathologists as to the intimate cause and nature of typhus fever, or enter into the elaborate argumentative controversies which have occupied so much of the thoughts and the pens of our profession. It is proposed now merely to examine into such points of interest as are attached to the history of a rare instance of the spread of zymotic disease into a locality, as a consequence or the sequence of the visit of individuals affected with other diseases. Cases of this kind offer a wide scope for discussion; so many points arise either at variance with or in consonance with theories long maintained, that at every step we feel we are trespassing on ground already trodden by numerous explorers.

In February last the attention of professional men in the City of Liverpool was specially attracted, by circumstances of unusual interest, to the subject of typhus fever. Without quarantine or precaution of any kind, fever was imported into that great mart of commerce, or rather appeared there as a sequela of the arrival of foreigners covered with filth and vermin, after a sea voyage characterized by overcrowding, exposure, faulty ventilation, and improper food. The details of the history of this visitation, although perhaps already familiar to medical readers, may be again touched upon as essential to a discussion of the points of controversy involved.

The facts are mainly as follows: on the twenty-fifth and twenty-seventh of February, thirty-two Egyptian sailors, forming part of a crew of three hundred, belonging to the Egyptian frigate Scheah Gehald, which had arrived in the Mersey three days before, were admitted to the Southern Hospital. Most of those who were seriously ill were suffering from dysentery or diarrhœa, a few from inflammatory affections of the lungs; the rest were enduring the effects of exposure to cold, which in three instances had occasioned gangrene of some portions of the foot or leg. The voyage from Alexandria had been tedious, and the clothing of the men insufficient. When fresh clothing was procured, each patient was put in a bath and his old linen destroyed. One of the men suffering from dysentery died a few hours after admission; the others were distributed in the different wards.*

Such are the only facts about these men individually which are of any special interest. It is because from them the origination and extension of a hospital endemic is traced that their actual condition upon their arrival is recorded. In about a week after their admission, the house-surgeon complained of sore throat, which in a day or two developed itself into fever; and simultaneously three or four patients in various parts of the building were attacked. Of the Egyptians, twenty-four were discharged cured within the three weeks after admission; and of the remaining eight, three died from dysentery and one from frost-bite.

In connection with the hospital, twenty-four persons took the fever; some of them having it after removal from the hospital. The two house-surgeons had it most severely, and one nurse died of it in the hospital. The pilot of the ship, an attendant in a bathing-place where two hundred apparently healthy Egyptians had bathed, and a patient who had been discharged from the hospital shortly after their admission, died of the disease.

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* London Lancet, April, 1861.

The character of the fever was that of true typhus—at first headache, flushed face, rigors, thirst, deafness, and suffused conjunctivæ. On the sixth or seventh day an exanthematous eruption showed itself on the body, arms, and legs. The pulse rose in some cases to 130 per minute; the tongue gradually coating with a white fur, then, as the disease progressed, becoming brown and dry. In two cases, however, which proved fatal, the tongue kept moist and very little coated, but swollen; and in a third, which recovered, an aphthous eruption appeared on the fauces and back part of the tongue. In most instances the skin was moist after the second or third day, and a tendency to diarrhœa was manifested in nearly all; more or less delirium was also present. In favorable cases the fourteenth day was generally the turning point of the disease, while the fatal cases terminated before that date.

It will thus be observed that none of the Egyptians were affected by the fever, but that they were, *apparently*, the cause of its appearance and extension. Why should they have escaped the fever themselves, and what was the connection between the appearance of dysentery on board ship and of typhus fever on shore? These are points not easily determined; from a single instance like this visit of exanthematic typhus, we can scarcely obtain sufficient data upon which to found many conclusions. Then, too, the profession of the great commercial emporium which formed the locality of the disease seems not to have been awakened to the consciousness of anything unusually interesting occurring among them until the time for collecting minute details had passed, and the outbreak of fever more than attained its acme. In spite of the direct communication with the great metropolis, we find nothing in relation to this febrile invasion in the London medical press until five or six weeks after the admission of the foreign sailors into the Southern Hospital. We are surprised that the outcry sometimes raised in favor of quarantine did not acquire a fresh impetus, when filth and destitution and poverty were thrust upon the attention of the people of Liverpool by these new claimants for their charity, and their careful nursing.

Several questions arise as to the manner in which malignant disease was thus propagated. If we adopt the views of supporters of quarantine regulations, and consider that the fever was imported into Liverpool, we must satisfy ourselves that Egyptians were capable of carrying the seeds of typhus with them, or that such a disease is prevalent in Egypt, from which it had been carried by them in their clothing or their persons. In other words, if the infection was brought from Egypt, is it the form of fever which prevails there? And if they could act as agents of transportation, could these Egyptian sailors live on shipboard, themselves pestiferous and yet not suffering from malignant typhous disease? On the contrary it appears that when the healthy crew returned to Alexandria in another vessel, adynamic fever broke out among them, and was fatal to Egyptians as well as Europeans.

It has been urged by some that typhus fever is never brought to European ports except by vessels coming from places where it was prevalent at the time of their departure. No mention is made in the present instance that it was raging at Alexandria; and, founding our conclusions therefore on the probability of its not being imported from Egypt, we are obliged to fall back upon the view that something on board ship, some pestilential cause, may have operated upon the health of the sailors to produce dysentery, and that these sailors arrived in Liverpool under certain conditions favorable to the propagation of typhus.

We cannot shut our eyes, however, to the fact that Egypt has been frequently visited by pestilence, and its inhabitants sometimes almost decimated by epidemics of the plague. If this disease possessed the characteristics of typhus—and from the description we have by Eusebius of the epidemic of the year 263, the disease alluded to must have been a sort of contagious typhus—we have abundant evidence that the people of Egypt have been subject to a form of typhus fever, and can therefore imagine that the seeds of disease might have been sown at home before the departure of the sailors. But in the absence of any positive testimony on this point, we shall assume, what is much more probable, that they were perfectly free from fever at the time of their embarkation at Alexandria.

It is impossible, of course, when a disease—one of the zymotic class, for example—attacks certain localities in a town, to ascertain exactly in how many of the individuals attacked we can ascribe the invasion to epidemic influences merely, in how many to contact with the infected, or to residence in an atmosphere contaminated by poisonous effluvia. But here we have those not suffering from typhus, but from dysentery, giving rise, apparently, to typhus. Was the dysenteric attack typhus fever in another form, or was it a result of the action of the same poison on shipboard that produced the fever on shore? Is the different sequence of the action of the same poison similar to the result produced at times in hospitals, when patients in the same ward suffer simultaneously from erysipelas, pyæmia, and hospital gangrene? Are the dark races more liable to dysentery than the white?

To answer all these questions satisfactorily it is essential that we should possess a greater amount of materials for information. If we consider the Egyptians as included under the "dark races,"—and we have the authority of works on that country for speaking of certain classes and the inhabitants of certain districts as dark and tawny or bronze,—we may not inaptly quote here the remarks of the distinguished author of the Dictionary of Practical Medicine, Dr. Copland, in favor of the intimate relationship of dysentery and typhus fever.*

"It may be here mentioned that the dark races," he observes, "particularly negroes, are more liable to dysentery than any other disease; that it assumes an extremely low or putrid form in them, when confined in ill-ventilated situations; and that, when a number, even of those in health, are shut up in such places, the cutaneous secretions, which are so abundant and offensive in these races, accumulate in and vitiate the surrounding air, so that if it be not frequently renewed, the systems of those thus circumstanced are thereby infected, and, instead of an infectious typhus, which would be the result in the European constitution, a putrid dysentery, spreading rapidly through all breathing the impure air, is developed. The disease is considered by the native Africans as infectious as small-pox, and is dreaded by them equally with it; these two being the most fatal diseases to which they are liable."

But, if this substitution be true, how did it happen that another set of the same crew, healthy perhaps at starting, as in the trip to Europe, were attacked with adynamic fever on the homeward voyage, and shared the fatality with the Europeans on board? Was not their susceptibility to dysentery as strongly developed and as predisposing to that affection while going from a cooler to a warmer climate, as in their voyage in the opposite direction; had climatic influences anything to do with the change; or were the circumstances altered on board the second ship, so as to prevent the germination of the poison of dysentery? We can only conjecture; but certainly if the dark races are not so frequently liable to low forms of fever as to dysentery, there is no very good reason why, except in the new atmospheric conditions in which they were placed, the same morbid effects should not have supervened.

We find the Egyptian sailors referred to in some of the medical journals as "Turks." The classes of the population of Egypt, however, from which such loathsome objects as the sailors of the Scheah Gehald would be selected, were most probably not of the Turkish element, which, though limited in number, is still the ruling race of the land. But 10,000, according to recent estimates, are Turks and Albanians, out of nearly 2,000,000 souls; and yet the Turkish language is the language of the government, the Turkish portion of the population the dependence of the nation. The victims of the malady are often spoken of as "dark," and we know that the lower classes are darker and coarser than the upper.* If they were Turks in the Egyptian service, they were doubtless liable to the diseases attacking the latter.

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* Vol. i. p. 699.

In examining into the question whether these Egyptian mariners carried typhus fever with them into Liverpool, we may pertinently ask whether they might not, with equal propriety, be said to have exported the fever when they departed from a place in which, as in the hospital, it was raging? In other words, might we not argue that as they could act, according to the views of some, as conveyers of poison into Liverpool, they could also, even when apparently healthy, with such a wonderful facility for pestiferous communication as has been ascribed to them, produce similar phenomena on shipboard? Dr. Edwards, of Malta, declares that true typhus is never seen there except when imported, thus implying that these sailors must have brought with them the poison, or that the ship was in a favorable condition for the generation of disease.

In the *Medical Times and Gazette* of April 21, 1860, mention is made of outbreaks of fever following the arrival of a vessel, although none of the crew may have been affected. "Missionary Williams," says the writer, "had learned, in the South Sea Islands, to connect the outbreak of pestilential fevers with the arrival of some ship from the coast of Africa, though there might have been no case of fever on board, nor during the voyage, so that he was led to ascribe it to the coming together of different races; and the same was believed to have been the case with H. M. S. *Growler*, with free laborers from the coast of Africa to the West Indies, in 1847. And thus, to point to the former history of the Egyptian frigate as an important part of the matter for investigation; for, if it be that there never has been a fever of the kind on board before, then, perhaps, Missionary Williams came nearest the truth after all in saying that 'contagion' or 'infection' is conveyed in, and given off from, the filthy skin of living persons."

Was the sickness which resulted in admission into the Southern Hospital well-marked dysentery, or was it typhus fever in another form, its exanthematic type hidden from the observation and diagnostic powers of medical men by the dark color of the skin? It is sometimes a plausible method of getting over difficulties of theories by leaving the main points of attack, and, by a flank movement, taking a new position which may become at once untenable again. It would be little to the credit of Liverpool medical diagnosis, had an adynamic disease in any form escaped notice, merely because it occurred in a darker race than that which they had been accustomed to see daily in their private and hospital practice.

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* English Cyclopædia, Geography, vol. ii. Lond., 1854, p. 885.

Besides, the cases of dysentery admitted immediately after the arrival of the Egyptian vessel remained long enough in the hospital—in fact, some days after the outbreak of typhus—to be studied in connection with the fever; and no description that we have seen of both sets of cases exhibits similarity of phenomena sufficient to warrant the assumption that they were forms of the same disease,—special subdivisions under the one general head, Typhus. Assuredly, the adynamia or the dysentery must have predominated, and it is scarcely probable that by a curious coincidence the latter should have been so much in excess in all the darker subjects, and the former in all the fresher cases occurring in the hospital among the whites.

One of the medical journals,* in its comments on this remarkable attack of typhus fever, and the important evidence it may afford as to its cause, remarks, that several points should be accurately determined before any positive conclusions are arrived at. Is it true, as asserted, that no single person among the Turkish (? Egyptian) crew had typhus at the time when the disease was communicated to persons in Liverpool? Had the Scheah Gehald any cases of typhus fever during the voyage, or had any of the crew any communication with persons ill of that disease? Can it be clearly made out that *all* the cases occurring at Liverpool among the inhabitants were really cases of exanthematic typhus? Did the disease seem to be caused by emanations from the *clothes* or from the *persons* of the Turkish sailors, who were dirty and sick, but who, it was stated, had not typhus? Thousands of Turks are said, by the same writer, to have died of the disease during the allied war in the Crimea; but if these were not Turks but Egyptians, the pertinence of the remark is not so striking. This confounding of different races does not materially add to the clearness of the discussion, or give importance to the arguments of those who practice it. We know little of the diseases and hygienic condition of the lower classes of the Egyptians, but we should not on that account appeal to the history of the small Turkish element in the upper classes of society there for all our knowledge of Egyptian pathology and practice of medicine.

We have already mentioned that those of the crew of the Scheah Gehald who returned home in the frigate *Voyageur de la Mer* had suffered from a form of adynamic fever. Dr. Edwards, of Malta, does not consider such cases as came under his observation, at that intermediate station, illustrations of the peculiar typhus fever which he had been accustomed to see in Europeans. And yet the symptoms he describes, if not associated with typhus so called, are characteristic of a low type of disease. The pulse was quick, over 100 in every case; the tongue white and swollen; they looked stupid, miserable, and wo-begone; they had watery eyes and great debility and headache. The Englishmen who suffered on board the same vessel had similar symptoms, so far as pulse, tongue, and conjunctivæ were implicated, but manifestations of extreme cerebral disorder were superadded, such as deafness, low-muttering delirium, tremor of the lower jaw in speaking, with copious mulberry rash, and afterward sudamina.

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* Medical Times and Gazette, April 13, 1861, p. 390.

We have here another phase of the question of nationality as influencing the spread of zymotic diseases. It seems to us that the cases among the Egyptians might have been examples of typhus in an early stage of its development, beyond which, for some unknown cause, the disease could not progress. And yet it is strange that all the Orientals who were attacked with the fever should be unable to advance beyond the limits of a single stage, when exposed to similar active causes of disease with the Europeans, while the latter passed with apparently the greatest facility into the more developed forms of the fever.

Whatever may have been the cause of this difference of susceptibility, whether nationality, difference of exposure, or other circumstances, or whatever the name by which we may distinguish the affection of which they were the victims, the mortality among the Egyptians during the passage to Malta was great. Why, if the fever was less adynamic with them, should the mortality have been serious? It is mentioned that some of those who were sick came on board in that condition at Liverpool, but it is not stated with what special complaint they were afflicted. If with dysentery, the previous question recurs as to the mutual influence of typhus fever and dysentery. If with typhus fever, the medical authorities at Liverpool and on board the steamer are reprehensible for their laxity of medical discipline and precaution. If with any other disease, was their attack of adynamic fever associated with, or independent of their other sufferings? In every view in which we study the history of this whole subject, new points of interest arise to occupy, puzzle, and confuse us.

Could quarantine regulations have prevented the spread of zymotic disease in this instance?

If it originated from the ship or crew, the purifying effects of personal cleanliness and ventilation might have been most effective, and in all such cases it would be well to have recourse to such sanitary precautions. Where persons have been crowded together for a time, and adynamic disease of any kind has appeared among them, the animal exhalations accumulate in such quantity in the apartments and about the person, while there has been an absence of proper ventilation and cleanliness, as in the case of the Black Assizes mentioned hereafter, as to act frequently like true ferments, and endanger the production of adynamic zymotic disease of some kind.

In the case in question, however, there was no marked indication in the first instance for the establishment of any rigorous quarantine, or of isolation of any kind. Still, all the circumstances should be borne in mind, and even should doubt exist of the general efficacy of such restraint upon commerce, when circumstances of an analogous kind present themselves, there ought to be none as to the propriety of adopting a thorough system of ventilation and cleansing of both the ship and the crew.

And now, after studying the history of this invasion of fever, the absence of exanthematous typhus in those who were apparently the causes of its appearance, the importation of low forms of fever, the prevalence of epidemic pestilential diseases in their own country, from which these Egyptians are presumed by some to have brought it, the diseases of the darker races, the connection between typhus and dysentery, the adynamic fever of the return voyage, the ethnology of the Turkish element in the Egyptian population, the association of outbreaks of fever with the arrival of certain vessels, the points necessary to determine at the outset of every investigation into the pathology of pestilential diseases, and the effects of quarantine regulations, we may finally endeavor to ascertain the true causes of the appearance of typhus fever at the time and at the place in which it actually occurred.

Very little stress is laid, by those who have referred to the fever in the medical journals, upon the fact that typhus was endemic in the immediate vicinity of the hospital at the very time when a new disturbing element was brought to the spot in the persons or the clothes of the filthy Oriental sailors. It is easy to understand that under other circumstances less favorable, these same filthy foreigners might have entered Liverpool, might have been thoroughly purged of their uncleanness, and have resided there or left there without any fatal consequences ensuing to those around them. It is not filth and faulty ventilation and crowding that constitute the sole predisposing causes of typhus, for all these conditions have existed over and over again without producing it. It is when favorable circumstances exist for its development in addition to all these, such as are found in atmospheric vicissitudes, personal exposure, etc., that the appearance of low forms of fever is so apt to follow.

We do not know when, therefore, to expect typhus to occur, merely because crowds are collected together in ill-ventilated places, but we have a ready explanation always at hand when these favorable conditions exist. So it may have been in the present instance; with a locality predisposed to a dangerous malady; an incursion of filth and squalor; no care employed to remedy the new evils which were thus superimposed upon the old; and no separation of the sick already in the hospital from the new-comers; it is not necessary to appeal to any connection between dysentery and typhus, or the substitution of the one for the other in different races.

Had several hundred of the lowest classes of the Liverpool population deserted for a time the discomforts of their own homes, and the poverty of their own resources, and after a life of toil on shipboard, surrounded by all the unfavorable circumstances of effluvia and atmospheric poisoning under which the poor Egyptians made their long passage over the ocean, these Englishmen, though not dark, might not the less have suffered from dysenteric attacks, might have arrived in Alexandria and been sent to a hospital, and have been the agents by which ataxic fever should originate and be diffused.

We are told by one writer on the subject, Dr. Cameron, Physician to the Liverpool Southern Hospital, that typhus was endemic in Liverpool, and that one of its favorite haunts was the locality in which the hospital was situated,—a fact of so much importance that we are surprised that it has excited so little notice in the discussion.

The details of the attack of exanthematic typhus which have now been fully dwelt upon, recall the history of a celebrated event in the annals of English jurisprudence. An analysis of the medical facts connected with the "Black Assize," as the fatal assize held in 1577, in Oxford town-hall, is called, presents some similarity of phenomena with that which we have been discussing. Persons living in an infected locality, not suffering from disease themselves, were, in each case, transferred to other spots, in which apparently healthy persons soon became the subjects of infectious disease. The facts of this point in Oxonian history may not be familiar to all. The best account of it is given in Anthony à Wood's "History and Antiquities of the University," published in 1796, vol. ii. p. 188, in which, speaking of the trial of one Jencks for sedition, it is remarked: "Judgment being passed, and the prisoner taken away, there arose such an infectious damp or breath among the people, that many there present, to the apprehensions of most men, were then smothered, and others so deeply affected that they lived not many hours after. The persons that then died, and were infected by the said damp, when sentence was passed, were Sir Robert Bell, baron of the Exchequer; Sir Nicholas Barham, sergeant-at-law; Sir Robert d'Oyley, the high sheriff; Hart, his under-sheriff; Sir William Babyngton, Robert d'Oyley, Wenman, Danvers, Fetiplace, and Harcourt, justices of the peace; Kerle, Greenwood, Nash, and Forster, gentlemen; besides most of the jury, with many others that died within a day or two after. Above 600 sickened in one night, as a physician of Oxford* attested; and the day after, the infectious air being carried into the next villages, there sickened 100 more. The fifteenth, sixteenth, and seventeenth days of July, sickened also above 300 persons, and within twelve days' space died 100 scholars, besides many citizens. The number of persons that died in five weeks' space—namely, from the sixth of July to the twelfth of August (for no longer did this violent infection continue)—were 300 in Oxford, and two hundred and odd in other places; so that the whole number that died in that time were 510 persons, of whom many bled till they expired. Some, the writer states, 'left their beds, occasioned by the rage of their disease and pain, and would beat their keepers or nurses, and drive them from their presence. Others ran about the streets and lanes in a state of frenzy, and some even leaped headlong into deep waters. * * * The parties that were taken away by this disease were troubled with a most vehement pain of the head and stomach, vexed with the frenzy, deprived of their understanding, memory, sight, hearing, etc. The disease also increasing, they could neither eat nor sleep. * * * At the time of their death, they would be very strong and vigorous; but if they escaped it, then they were to the contrary. It spared no complexion or constitution, and the choleric it chiefly molested. That which is most to be admired is, that no women were taken away by it, or poor people, or such that administered physic, or any that came to visit. But as the physicians were ignorant of the causes, so also of the cures of this disease.'" The same authority mentions a similar event at Cambridge, at the assizes held in the castle there in the time of Lent, 13 Henry VIII., A.D. 1521, where the justices, all the gentlemen, bailiffs, and most who resorted thither, took such an infection that many of them died, and all almost that were present sickened, and narrowly escaped with their lives.*

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* Geog. Edrycus in "Hypomnematibus Suis in Aliquot libros Pauli Æginetæ," edit. London, 1588, lib. 2.

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* English Cyclopædia, conducted by Charles Knight, Arts and Sciences, vol. ii., London, 1859, p. 178.

Bi-Monthly Abstracts;

OR, BI-MONTHLY NOVELTIES IN MEDICAL, PATHOLOGICAL, SURGICAL, OBSTETRICAL PHYSIOLOGICAL, AND CHEMICAL SCIENCE.

SURGERY.

BY JOHN H. PACKARD, M.D., OF PHILADELPHIA.

I.—*Statistics of Operations for Strangulated Hernia at St. George's Hospital during Seven Years.* By G. F. COOPER and T. HOLMES, formerly Surgical Registrars to the Hospital. (Medical Times and Gazette, June 15, 1861.)

THE cases operated on were 121 in number, 33 of the inguinal, 85 of the femoral, and 3 of the umbilical variety; the total number of deaths was 37, or 30·5 per cent.

INGUINAL.—Total, 33; common oblique, 19; congenital, 10; infantile, 1; direct, 3; of these, 22 were on the right, and 11 on the left side; 9 died, or 27·7 per cent.

Of the 19 cases of common oblique hernia, 2 were females and the rest males; 4 died, or 21·05 per cent., of which deaths 1 was the result of bronchitis; 14 were on the right side, and 5 on the left.

Of the 10 congenital cases, (all males,) 7 were on the right side and 3 on the left; 4 died, or 40 per cent., 1 probably as the direct result of injuries received during taxis;* 3 were infants, 3 months, 7 months, and 14 months old respectively; of these, two died. One aged 14, where the hernia had existed since birth, died. The following recovered: 1 aged 24, where the hernia had existed since the age of 9 years. One aged 33, where the hernia had existed as long as he could remember. One aged 33, where the hernia had existed since the age of 6 years. One aged 54; of this case there was no history. One aged 58, where the hernia had existed 4 years only. Finally, the oldest patient in this class died after operation; he was 60 years of age; the hernia seems to have existed congenitally, and had been operated on 15 years previously.

It thus appears that in most of these cases the hernia was either known to be congenital, or to have existed for so long a period that it might fairly be presumed to have been so.

Of the 3 cases of direct hernia, there were 2 males and 1 female; 2 were on the left side and 1 on the right; 1 died, or 33·3 per cent.

In the case of infantile hernia, the patient was 32 years of age; the hernia had been known to exist for 20 years; it was on the left side. The patient recovered.

Age of Patients with Strangulated Inguinal Hernia.—The age of the patients with congenital hernia is stated above. Of the 23 instances of the other forms of inguinal hernia, one was an infant 11 weeks old, (died of bronchitis,) and another 4 years. The youngest age of the remaining 21 cases was 15 years and the oldest 70. The occurrence of strangulation at the middle period of life is shown by the following statement of the ages of these 21 patients:—

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* No doubt the principal, if not the sole reason for the greater mortality in this class of cases, is the large number of infants contained in it.

From childhood to 30 years	(inclusive)	4	
From 30 to 40 years	“	5	—1 died.
From 40 to 50 “	“	6	
From 50 to 60 “	“	4	—3 died.
From 60 to 70 “	“	2	

As to the length of time that this form of hernia had existed before the occurrence of strangulation little need be said beyond this, that in 2 cases only was the hernia quite recent. It seems useless to tabulate the "average duration" of the hernia previous to strangulation, since this depends so much on accidental circumstances.

Period of Strangulation.—Under this head the list of inguinal hernia gives a very favorable return, since the great majority were operated on within 24 hours of strangulation.

1st day of strangulation,	19	3 died—all of peritonitis. In 1 it had begun before the operation; 1 of the others was an infant.
2d “ “ “	5	2 died—1 (an infant) of exhaustion already begun; the other from phagedæna around an artificial anus.
3d “ “ “	5	3 died—in all, the gut was irretrievably damaged; in 1 case by ulceration, and in the other 2 by forcible taxis, applied before admission.
4th and 5th “	4	1 died—of bronchitis, (an infant.)

These figures clearly show how successful the operation for inguinal hernia may be expected to be in the adult, if the case be operated on before the occurrence of peritonitis; since, excluding from the above list the infants, the fatal case in which peritonitis had set in before the operation, and the 3 cases in which injury had been inflicted on the gut by the negligence or violence of the medical attendant, we have 20 cases and only 2 deaths; and as one of these was a very unusual and exceptional instance of sloughing around an artificial anus, it would perhaps be more correct to say that out of 25 ordinary cases, in which the operation was performed early, only 1 died, and in this case the stricture was unusually tight, and the operation difficult from some folding or invagination at the neck of the sac.

Trusses worn or not.—It has been already stated that it is very rare for inguinal hernia to become speedily strangulated. Hence it is probable that if a well-fitting truss were applied soon after the first appearance of the tumor, few cases would ever require operation. In the only 2 in which the hernia was recent, no truss had been worn. Of the whole 33 cases, in 12 no truss had been worn; 2 had originally used trusses, but the instruments had soon become broken and had not been replaced; 4 others had exposed themselves to still further risk by wearing badly-fitting trusses; and in the other 15 cases a truss had been worn, but in many it was known not to have been adopted till long after the first occurrence of the hernia, and this was the case, doubtless, in several others, in whom, in consequence of the lapse of time, the circumstance had escaped their recollection.

*Contents of the Sac and their condition.**—In one case the sac was not opened. The sac in almost all cases contained serous fluid, varying in quantity as well as in the proportion of blood mixed with it. The latter seemed due, sometimes at least, to violence in the employment of the taxis.

The visceral contents of the 32 herniæ may be thus classified:—

Healthy or only congested small intestine . . .	14—2	deaths.
Inflamed small intestine	6—3	"
Healthy small intestine with omentum	9—2	"
Inflamed large intestine	1—1	"
Both large and small intestine with omentum . .	2—1	"
	32—9	deaths, or 28·1 per cent.

In many of the cases of entero-epiplocele, the omentum was adherent, thickened, or showed some trace of morbid action; in most of these it was excised, but as this fact does not seem to have affected the progress of the case, it will not be worth while to dwell particularly on the state of the omentum. In none of the cases of entero-epiplocele was the gut visibly inflamed, nor was the mortality much greater than in simple enterocele, and in one of the fatal cases, excessive taxis had been employed. In no instance was the gut found ulcerated in the line of stricture.

The three cases in which the large intestine was contained in the sac were all on the right side; in one, the appendix cæci was so riddled by ulceration that it was thought right to tie and cut it off. The other fatal case was that alluded to in which phagedæna attacked the margins of an artificial anus.

Causes of Death.—Hence it appears that the causes of death were in most of the cases entirely independent of the operation. We may also conclude that inguinal hernia is little liable to strangulation,† especially if early treated by a well-fitting truss; and that when strangulated, if the taxis fails, an operation affords every prospect of success, if early performed on a healthy patient.

UMBILICAL.—All the patients were females, and past middle life. The sac in each contained a good deal of omentum, which in one instance formed the stricture. The fatal result of one case was due to previous peritonitis.

FEMORAL.—This form of hernia is much more frequently strangulated than inguinal. In the present table there are 85 of the former to 33 of the latter. Of the 85, 14 were males and 71 females; 46 had the right side affected, 37 the left, while in 2 cases this point was not noted. The deaths were 27, or 31·76 per cent.

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* The data in regard to the significance and quantity of the fluid generally found in the sac were not sufficiently accurate in this set of cases, as recorded, to justify any deductions.

† It must be remembered that inguinal hernia is more than seven times as common as femoral, while its strangulation is hardly more than one third as common. See a paper by Mr. Bryant in *Guy's Hospital Reports*, Third Series, vol. ii.

Age.—One case occurred in a girl aged eight; all the rest were over twenty, as follows:—

From 20 to 30, inclusive	4 cases	—1 died.
" 30 " 40 "	20 "	3 "
" 40 " 50 "	21 "	4 "
" 50 " 60 "	20 "	7 "
" 60 " 80 "	19 "	12 "

Hence strangulation seems to occur in about the same number of cases in each decade after the age of 20, but to be more dangerous as life advances.

Duration.—In 20 cases the hernia was quite recent; so that in almost a quarter of the whole number strangulation commenced very soon, often, the patients thought, directly after the tumor appeared. This tendency to early strangulation makes femoral hernia dangerous. In 29 cases the tumor had existed from a few weeks to three years; in 1 its date was uncertain, and in 35 was more than four years; 27 years was the longest period recorded.

Period of Strangulation.—This was generally longer than in inguinal hernia, probably for two reasons: first, the reluctance of the women who are usually affected to apply for assistance; and, second, the comparatively small size of the tumor, causing it to be overlooked for a time.

1st day of strangulation	10 cases	1 death—from peritonitis.
2d " " "	20 "	5 deaths—from cholera, internal strangulation, old bronchitis, previous peritonitis, and sloughing of the gut, each 1.
3d " " "	23 "	6 deaths—from bronchitis, gangrene of gut, (2 cases,) ulceration and perforation (3 cases.)
4th " " "	11 "	4 deaths—from exhaustion, peritonitis, (2 cases,) ulceration of gut.
5th " " "	9 "	3 deaths—from peritonitis, gangrene of the gut, secondary hemorrhage.
6th " " "	4 "	2 deaths—from peritonitis, ulceration of intestine.
Different days up to 10th	6 "	4 deaths—from exhaustion and peritonitis, (2 cases,) gangrene, ulceration of intestine.

Two exploratory operations were also performed on patients dying with constipation and peritonitis; in one the sac was empty, and in the other the gut was not strangulated. It appears from the foregoing facts that the operation for femoral hernia, if early performed on a healthy patient, is free from any great risk.

Truss.—Strangulation is generally traceable to the neglect of wearing a well-fitted truss. Of the 85 cases, only 20 had worn a truss, and 2 of these only occasionally; 1 had only lately adopted it. The others wore either no truss at all, or a badly-made one.

Contents of the Sac and their Condition.—In 3 of the cases the sac was not opened; in 1 it was empty. Of the remaining 81, the sac contained

Omentum alone in . . .	5	cases—	All recovered.
Healthy or congested small intestine in	21	"	3 deaths.
Small intestine with effused blood in	4	"	1 death from internal strangulation.
Inflamed small intestine in	15	"	4 deaths.
Ulcerated, perforated, or gangrenous intestine, in . .	8	"	5 deaths.
Small intestine with omentum—			
Both healthy, in . . .	2	"	Both recovered.
Intestine inflamed . . .	5	"	3 deaths, 1 from cholera.
Omentum sloughy or consolidated	9	"	3 deaths.
Intestine perforated or gangrenous	3	"	3 deaths.
Omentum adherent . .	4	"	2 deaths.
Omental sac " . . .	4	"	2 deaths, 1 from bronchitis.
Large intestine	1	"	Recovered.
	81		26 deaths, or 32·1 per cent.

Causes of Death.—The 27 deaths from femoral hernia may be thus arranged:—

Other diseases	3—viz.: cholera, internal strangulation, and bronchitis.
Exploratory operations	2
Hemorrhage after operation . .	1—probably from some small vessels.
Pure and simple peritonitis. . .	6—in 2 cases it had existed before the operation; 2 of the other patients had had, one bronchitis and the other Bright's disease.
Exhaustion from protracted strangulation.	2—it had lasted 7 and 8 days respectively.
Ulceration of the gut in the course of the stricture at the time of operation	5
The same, occurring subsequently.	2
Gangrene of the gut at the time of the operation	2
The same, occurring subsequently.	4

Hence it is inferred that the mortality of femoral hernia is due almost entirely to the negligence of the patients, and to the ignorance or apathy of their medical attendants; the rule at St. George's Hospital has for a long time been to operate very early.

Sac opened or not.—With respect to our tables alone we can draw no conclusions, by comparing the cases where the sac was opened with those where it was left intact; since with us it was opened in every case save four, and those of course were of the simplest character. But in the *Lancet* of 1856, there is a paper by Mr. Nathaniel Ward, in which he gives 100 cases from the London Hospital, where the rule is, *cæteris paribus*, not to open the sac; and as some deductions may be arrived at by comparing his table with ours, we have thought it advisable to make a similar classification of our cases and place them together, thus:—

London Hospital.

No. of Cases.	Nature of Hernia.	Sac opened.	Sac not opened.	Deaths.	
100	Umbilical . 4	4	—	3	33 per cent.
	Femoral . 63	21	42	19	
	Inguinal . 33	24	10	11	

St. George's Hospital.

121	Umbilical . 3	3	—	1	30·5 per cent.
	Femoral . 85	82	3	27	
	Inguinal . 33	32	1	9	

This comparison seems to show at least that very little additional risk is incurred by laying open the sac, while the information thus gained is certainly of no small importance.

The duration of the treatment in the favorable cases averaged for the inguinal variety thirty-six days, and for the femoral thirty-four.

On the question of opening a gangrenous intestine, or of leaving it alone, the slight evidence furnished by so small a number of cases is much in favor of making the opening; since, out of eight cases in which the intestine was found perforated or gangrenous, three recovered; and of these the gut was slit up at the operation in two instances. In one of these the artificial anus was nearly closed when the patient left the hospital, and eventually became entirely obliterated; in the other, the patient survived for more than a year with the artificial anus open, when, from some accidental cause, the adhesions between the gut and the parietes of the abdomen gave way, and the intestine was protruded and strangulated by the artificial anus. It was returned and reattached to the opening, but the patient sank.

II.—*On the Radical Cure of Inguinal Hernia.* By HOLMES COOTE, Esq., F.R.C.S., etc. (Lancet, June 1, 1861.)

Mr. Coote speaks of the case of a man in whom a strangulated hernia required operation, notwithstanding an attempt at the radical cure by Wützer's method, made three years previously, and with apparent success. Here, says Mr. Coote, "the inverted plug of integument had come down, and a fibrous constriction of the peritoneal sac remained, which proved the seat of the stricture. I believe this fibrous constriction, in part at least, to have been due to the changes consequent upon the passage of the needle in Wützer's operation, and it had served to keep up the intestine very fairly for above two years and a half. It then yielded, and became the seat of stricture to a protrusion somewhat larger than had ever been before."

Eight other cases are then adduced, in which inguinal hernia reappeared sooner or later after their radical cure had been attempted by surgeons of well-known skill and experience. Mr. Coote desires to call attention to the subject, with a view of testing the reliability of the procedure.

III.—*On Abdominal or Pelvic Abscess.* By F. C. Skey, F.R.S., of St. Bartholomew's Hospital. (Dublin Medical Press, May 15, 1861.)

Mr. Skey ascribes this lesion, of which he has seen several instances during the last few months, to debilitating influences upon the constitution. Its general situation is the iliac fossa. "It appears in the form of a firm—not necessarily a hard—swelling, very distinctly perceptible on pressure over the above region. If small, its presence is only readily detectable by comparison with the opposite fossa, into which the ends of the fingers sink on moderate pressure. In this respect, however, there is a difference appertaining to the varieties in the form and quantity of the contents of the abdomen, especially of fat, and the greater or less laxity of the walls themselves. Occurring in young women shortly after parturition, its presence is remarkably distinct. When large, the swelling is apparent to the eye as well as to the touch—extending across the abdomen toward the mesial line, and upward in the direction of the umbilicus. In such cases the swelling is prominent, and as it increases in magnitude it encroaches on the intestines, which are pushed across to the opposite side. In many cases pain is not a prominent feature; and when present it is usually not severe, but is dull and aching rather than acute in character.

"In its early stage I have known this disease to be mistaken for two other varieties of swelling—malignant disease of the pelvis and scybalæ in the colon. From malignant disease it may be distinguished by the general uniformity of the swelling, and by the less serious constitutional signs of health undermined; and, judging from liabilities, malignant growths of or from the pelvis are far more uncommon than chronic abscesses. These examples of pelvic abscesses have presented themselves to my observation more commonly on the right than on the left side. I am not aware whether scybalæ collect more usually on that than on the left, but certainly they are more palpable and more readily detectable in the head of the colon than in the descending part of the intestine, which is placed in less proximity to the abdominal walls than that on the right side. But scybalæ are limited in their relation to the front abdominal walls by the caput coli, and, moreover, are movable; whereas the mass, which gradually resolves itself into the abscess, presents to the hand the sensation of a large and solid deposit, firmly fixed, and considerably larger than the intestine itself. The disease progresses very slowly, and often requires weeks for its development." Sometimes the abscess points directly through the skin, or it may follow the course of the femoral vessels, or pass backward through the sacro-ischiatic foramen; occasionally it extends across the abdomen behind the peritoneum, and so reaches the femoral vessels of the opposite side.

When the abscesses are large, of slow development, and so placed that the matter is bound down by the pelvic fascia, the subjacent bone is very apt to suffer. Several interesting cases in point are adduced.

The proper treatment of this lesion is "that which will most readily convert a chronic into an acute abscess. Any attempt to 'resolve' or 'discuss' these morbid deposits would be futile, and quite unworthy the advanced progress of scientific surgery. * * * * In order to obtain absorption of the deposited mass without passing into suppuration, we must convert the present stage of debility into the highest condition of vigorous health, and that is impossible. All that we can hope for, all that the best resources of art can achieve, is to change the chronic into an acute abscess, to advance the formation of pus, and to compel the abscess to select that locality through which it can most readily discharge its contents on a surface of the body. To effect this the appetite must be improved, and gratified with as large a quantity of nutritious food as can be digested; force and vigor must be given to the pulse by means of stimulants,—and the capacity for stimulants in these cases of debility is very great,—while the lungs should be supplied with an ample quantity of fresh air for the thorough oxygenation of the blood. If there be one therapeutic agent more valuable than another in promoting suppurative action it is bark, and it should be given throughout the treatment in full quantities. At the earliest moment at which fluid can be detected near the surface the abscess should be freely opened. It most commonly points through the abdominal muscles; but the rule equally applies should the abscess point toward the rectum, or when occurring in the female, toward the vagina, or on the nates or region of the trochanter."

IV.—*Cases of Gluteal Aneurism.* By MR. SYME. (Lancet, June 8th and 22d, 1861.)

In the first of these cases the aneurism had arisen spontaneously, in a young man otherwise healthy; it was of moderate size, pulsated freely, and seemed to affect the vessel at the point of its escape from the pelvis. Mr. Syme tied the internal iliac, in the usual way; the pulsation immediately ceased in the tumor, which lost two-thirds of its volume. The case did perfectly well, the ligature coming away on the seventeenth day, (not the twenty-fifth, as erroneously stated in one account.)

The other case was that of a middle-aged man, who was wounded by a pruning-knife driven deeply into his hip. The wound bled freely at the time, but became closed; subsequently the aneurismal tumor appeared, and at the time of the operation had attained the size of a man's head, its shape being bluntly conical.

"Mr. Syme commenced the operation by plunging a bistoury into the tumor. This was followed by a gush of arterial blood, which spouted to a considerable distance, but was immediately arrested by the operator introducing the forefinger of his left hand, the wound having been calculated for this. With his finger in the sac, Mr. Syme now explored the interior, hoping to discover the situation of the opening of the artery by the entering current. Nothing, however, could be felt but a confused mass of clots. The operator then enlarged the wound cautiously until the whole hand could be introduced, which was now thrust in up to the wrist. As the hand was being used to search the interior of the sac, it was so held that the wrist was nearly sufficient to occupy the wound; but during this procedure several alarming gushes of blood took place. * * * Compression of the abdominal aorta was tried; but as the patient lay nearly over on his face, this could only be done by pressing the abdomen up with one hand and the spine down with the other; and, as in John Bell's case, it appeared to do no good. Meanwhile, nothing satisfactory could be made out by the hand; only masses of irregular and very dense coagula could be felt, from among which the blood came welling up. At this time the situation appeared a very critical one, and to those who were unacquainted with the operator's resources it seemed that he had only to choose between standing there forever, plugging the wound with his hand, or to withdraw it and let the patient's blood gush out.

"Mr. Syme again took the knife, ran it swiftly up and down, laying freely open the whole cavity,* and scooped out the clots, one of which was of enormous size; the assistants, ready with sponges, darted them into the bottom of the sac, and the serious bleeding was at an end. All this was done with the greatest rapidity and precision, Mr. Syme stating afterward that, in taking this step, he had perfect confidence in his assistants, on whose intelligent aid so much depended. The bleeding from the artery could now be commanded by direct pressure; not, however, Mr. Syme stated, when made against the bone, but when made into the sciatic foramen. The mouth of the artery was now seized with artery forceps, and a ligature carried round it and tied. All bleeding and risk" [?] "were now at an end. The edges of the wound, which was directed downward and outward, were brought together and covered with a pledget of lint and a folded towel, but no bandage or compression was applied. The patient was under chloroform, and bore the operation well. The audience seemed surprised when Mr. Syme said that not much more blood had been lost than after a large amputation; but he reminded them that a large part of the blood that had escaped was that contained in the aneurism. In John Bell's case," [operated on at the same hospital sixty years ago,] "the patient had fainted from loss of blood, and was supposed to be dead before the sac was laid freely open. Mr. Syme also remarked that after the firm fibrinous coagula were removed, the whole of the cavity was found to be lined by a distinct and perfectly smooth membrane."

This case, like the preceding, has gone on favorably since the operation, as might indeed have been expected.

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* The House Surgeon of the Infirmary, in a note published in the *Lancet* of June 29, says: "Before opening the sac further than to admit his hand, Mr. Syme separated all the dense layers of fibrin which he found firmly adherent to the bottom of the cavity, so that when a free incision was made by running the knife from one end of the tumor to the other, the whole contents, both solid and fluid, were evacuated instantaneously, and thus allowed the pressure of a finger to act at once directly on the bleeding orifice."

V.—*Aneurismal Varix in the Upper Part of the Thigh, following the employment of Pressure for the Cure of an Aneurism of the Posterior Tibial Artery.* Reported by OLIVER PEMBERTON, Esq., to the Royal Medical and Chirurgical Society. (Lancet, June 22, 1861.)

The patient, an old soldier, had suffered from aneurism of the posterior tibial artery for about three months. Pressure was made for three weeks upon the femoral artery where it passes over the pubis, and subsequently, for nine months, at a point below Poupart's ligament, just above the origin of the profunda; by which means a cure was effected. There was, however, some thickening where the pressure had been so long applied; and ten months afterward it became evident that a communication was established between the artery and the vein at that point. Eighteen months later, the man died from effusion into the pleural and peritoneal cavities, due to disease of the heart.

"The arterio-venous disease was found to be of that variety termed aneurismal varix. The right femoral artery and vein communicated by a large, distinct opening in the former vessel; while the vein was dilated and varicose, so as to have expanded itself into a sacculated covering for the greater portion of the artery in which the aperture had been established. There was no arterial aneurism, but the femoral artery was dilated at and above the aneurismal varix." Mr. Pemberton thinks that "the femoral vein became varicose from the pressure, causing obstruction to the return of its blood, and subsequently adhered intimately to the artery. Afterward, the communication was established between the two vessels, owing to the pressure of the varix on one hand, and to the action of the blood on diseased arterial coats on the other."

VI.—*New Mode of Reducing Luxations of the Shoulder-joint.* By Professor N. R. SMITH. (Am. Journal of the Med. Sciences, July, 1861.)

After reviewing the mechanical arrangements of the joint, the usual forms of its dislocation, and the difficulties in the way of their correction, Dr. Smith suggests that the most efficient counter-extension may be made from the wrist of the sound side, extension being effected from that corresponding to the injury. Having tested this idea for twenty years, he proposes a new plan of treatment, which he describes as follows:—

"I place the patient in a chair, sitting a little on one side of it, so as to allow room on the side of the injury for the operator's foot. I then pass a piece of stout muslin, folded, around the chest and under the axilla of the injured side. The tails of it I carry horizontally to the opposite side, one in front, the other behind, and extending the arm horizontally, bandage them firmly to the wrist of the sound side, leaving the ends projecting, to be well secured to the wall or other unyielding substance.

"I then pass an ordinary roller over the top of the injured shoulder, and back and forth, twice under the muslin band, to prevent its slipping down. Then I continue the same roller under the bottom of the chair and over the shoulder three or four times. This helps to give steadiness to the scapula, and especially to prevent the involuntary rising of the patient from the chair, or the tilting of the scapula upward, when it is necessary to make the manipulation of which I am to speak.

"I now attach the extending band to the wrist of the injured side. * * * * I first apply a wet roller to the wrist, and then attach a muslin band by the clove hitch. Next I direct the extension to be made by two persons, at first outward and a little downward, gradually raising the arm to the horizontal direction, and finally a little above it. The extension must be made gently and steadily, gradually increasing the force, so as not to provoke the muscles to spasmodic resistance. As no pain is created by the force thus employed, it may be continued for a considerable time. The muscles, which at first resist, become fatigued, and finally relaxed, and, in a large majority of instances of recent luxation, the head will slip into place without resort to any species of manipulation. I would even continue this traction, where much resistance is encountered, for a quarter of an hour before modifying the force; but in case the object is not then effected, let the surgeon place his foot on the margin of the chair, and his knee in the axilla. Then let the assistants raise their line of traction above the horizontal as much as possible, and continue it for a moment. The surgeon should then direct that the arm be, by a sudden movement, carried downward, while, by extending his foot, he elevates the knee in the axilla. He aids the assistants in this by grasping the arm near the elbow and using it as a lever. * * * * Where the consecutive displacement under the coracoid has occurred, the procedure is nearly the same, except that I make the traction a little more in the direction backward and upward, so as to disengage the head from under the process."

With regard to the dislocation upon the dorsum scapulæ, Prof. Smith says that he has seen but three cases, and in only one of these was an attempt at reduction warranted. "I failed," says he, "to effect the reduction in the method usually recommended, and which I had deemed the best. I did not then practice extension from the opposite wrist. I made it by carrying the arm through a slit in a sheet. The extension was made from the wrist, and when continued for some time, I sought to throw the head into place by manipulation—that is, I placed my knee against the back of the neck of the bone, and swinging the arm backward, endeavored to prize the head of the bone into its place. I repeated the effort several times, but with no satisfactory result.

"I then carried a band over the front of the shoulder, one tail under the axilla, the other above it. These I united, carried them backward and inward obliquely, and secured them to the wall. Then I made traction strongly from the wrist almost directly forward. Without much difficulty I thus drew the head of the bone forward over the margin of the glenoid, and had the satisfaction to see it slip into its place."

VII.—*Anterior Suspensory Apparatus for the Treatment of Fractures of the Lower Extremity*. By Prof. N. R. SMITH. (Am. Journal of the Med. Sciences, April, 1861.)

Dr. Smith defines the objects to be aimed at in treating fractures of the lower extremity as follows: "1st. To furnish a surface of support which shall be accurately and permanently adapted to the surface and form of the limb which reposes in it. 2d. To so adapt the surface of support as that the limb, sinking into it, shall maintain its form by its own weight, without the necessity of lashings here and there, to secure it to the rigid portions of the apparatus. 3d. To make the limb obedient to all the unavoidable movements of the trunk, so that the upper fragment shall not be jammed upon the lower, nor contorted in relation to it by the movements of the trunk. 4th. To obviate the contraction of the muscles by the employment of an extending force, uniform in its action, easily graduated, and not requiring the application of bands to the ankle. 5th. So to arrange the supports that in compound fractures we may have free access to the seat of injury, without removing any of the essential supports of the limb. 6th. To effect these objects by an apparatus simple in construction, capable of being anywhere procured, easy of application, not requiring to be readjusted, and of but trifling expense."

We have not room here to quote the whole of Dr. Smith's interesting article, but must be content with giving his description of his apparatus. The splint, as now used by him, is made of wire, about as thick as a No. 10 bougie. If lighter than this, it is apt to spring too much. One piece of wire is bent twice at right angles at each extremity, so as to form a very long parallelogram, three inches wide at its upper extremity, two-and-three-quarters at its lower. "It must be long enough to extend from a point a little above the anterior spinous process of the ilium. to an inch beyond the toes when the leg, foot, and thigh are extended. Three feet eight inches will be sufficiently long for most adults. A little excess of length, above or below, is unimportant. The side-pieces are to be sustained by cross-pieces at distances of about eight inches, firmly clinched upon them. The wire frame is then to be bent by the surgeon to suit the case. The lower angle corresponds to the ankle, and is one of about 120°, to secure an easy posture of the foot. The angle at the knee is very obtuse—about 160°. The angle at the hip should be about the same degree. The angle at the ankle should be about six inches from the extremity; that of the hip seven. The middle bend corresponds to the knee. The angles are easily made by bending the splint over the margin of a strong chair or table. It will often be necessary to vary these angles to suit particular fractures. The wire frame is now to be tightly wrapped in a muslin bandage, and it is ready for application.

"The suspensory apparatus is simple and easy of application. A small iron pulley is to be screwed into the ceiling, over the bed of the patient, perpendicularly over the middle of the shin, or nearly so. A cord, about as thick as the wire of the splint, passes over the pulley and is reeved through a small tent-block, by which, slipping it upward or downward, we elevate or depress the limb. The eccentric pressure prevents the weight of the limb from causing it to slip; if not, rub the cord with chalk. This single cord, which depends from the block, has a loop at its end, about two feet or more above the limb. Through this another cord, about five feet long, passes and hangs double from the loop, by its centre. Each end has a double hook attached to it. It is made of much smaller wire, has an expansion nearly equal to the breadth of the splint, and has the points sharpened and abruptly turned inward, the bends being quite angular, so as snugly to embrace the wire and not slip upon it. When everything is ready for the suspension, these hooks are to be applied to the wire-frame, piercing with them the muslin cover of the splint."

The splint being applied along the front of the limb, the latter being supported by assistants, strips of starched bandage are arranged at different points so as to suspend the limb from the splint. The hooks are then applied, and the cord pulled upon so as to swing up the splint, and with it the limb. If the splint does not fit, it may be made to do so by changing the position of the hooks. A roller is now applied to the whole limb, finishing with a spica of the groin and one or two direct turns around the pelvis. Sometimes the whole under portion of this bandage may be smeared with starch. Extension and counter-extension are now made at once, by moving the bed so as to render the cord slightly oblique; if necessary this may be rendered more effectual by putting blocks under the footposts, so as to raise the lower end of the bed. The heel should just hang clear of the surface below it; a small pillow may be so placed as to steady the upper part of the thigh.

Such is the mode of application of this method to fractures of the thigh; it needs some modifications which will readily suggest themselves, when employed in fractures of the other bones of the lower extremity.

PATHOLOGY AND PRACTICE OF MEDICINE.

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I.—*Researches on Asphyxia; with Observations on the Effects produced by the Hot Bath in Asphyxiated Animals, and its Use in restoring Suspended Animation.* By A. T. H. WATERS, M.R.C.P. Lecturer on Anatomy and Physiology in the Royal Infirmary School of Medicine, etc. (Communicated by Dr. Sharpey.) Proceedings of the Royal Medical and Chirurgical Society, May 14, 1861. (Lancet, May 25, 1861.)

The writer commences his interesting paper by stating that although physiologists are agreed as to the order in which the arrest of the vital actions takes place in asphyxia, they differ as to the duration of the heart's action, and the best mode of treatment in suspended animation. Two important points remain to be decided: first, the period after asphyxia has commenced during which treatment is likely to be successful in restoring animation; and, secondly, the value of the hot bath as a remedial agent. Two questions arise, and experiments on dogs, cats, and rabbits have been instituted with reference to them:—

1. How long does the heart continue to beat in asphyxia?

2. What are the effects of the hot bath on an asphyxiated animal—firstly, after all respiratory movements have ceased, and are not re-excited; secondly, where respiration has been re-excited, and is being feebly carried on?

The following conclusions are drawn by the author from his experiments:—

1. That in asphyxia by submersion, the ventricles of the heart do not, as a rule, cease to contract "in a few minutes after the cessation of the functions of animal life," but that in many instances their action continues for a very con-

siderable period, and that this serves to explain how recovery has taken place after lengthened submersion.

2. That in cases of asphyxia where respiration has altogether stopped, the effects of the hot bath are: to produce an accumulation of blood in the lungs and in the left side of the heart, together with a tendency to coagulate on the part of the blood; that it does not tend to prolong the action of the heart, but rather to paralyze its movements, and diminish the duration of its contractions; that it does not excite respiratory efforts, and prevents artificial respiration being properly carried out.

3. That in cases of asphyxia where respiration has been re-excited and is being feebly carried on, the hot bath, although in some instances it seems to have no immediate bad result, yet has a tendency to produce a fatal issue some hours after its use, by causing extreme congestion of the lungs, together with consolidation and collapse of the pulmonary tissue.

The following practical inferences are drawn from the above conclusions:—

1. That efforts to restore animation should be made in all cases where asphyxia has not been of very prolonged duration.

2. That the prolonged use of the hot bath in asphyxia is not only inefficacious, but dangerous; and that its temporary use appears to be attended by no direct benefit. So far as any means similar to that of the hot bath are likely to produce respiratory movements, the alternate dashing of hot and cold water on the body is probably the most efficacious.

3. That it appears safer practice to omit all artificial treatment, when respiration is going on feebly, than to make use of the hot bath.

4. That in the treatment of asphyxia all efforts should be primarily directed to restoring, or continuing, the respiratory movements; and all measures tending to load the lungs or embarrass the respiration should be avoided.

Dr. Waters's recommendations are, the use of friction, moderate temperature, and the method of Dr. Marshall Hall. By this method, Dr. Sylvester had obtained a displacement of one cubic inch only, while in his (Dr. Waters's) experiments on the dead body he had succeeded in displacing eight or ten cubic inches, which would probably be sufficient. He believed that the position in which the body was placed in Dr. Marshall Hall's method was of great importance in allowing fluids to fall out of the mouth.

Dr. Babington was not sure whether experiments upon dogs respecting warm baths were applicable to human beings; the warm bath would probably be more injurious to asphyxiated dogs, from the fact that the skin of the dog was remarkably thick, and it was known that he did not perspire. Dr. Chambers said that asphyxia in new-born children was not removed by the use of the warm bath.

At a subsequent meeting of the society, a letter was read from Sir B. Brodie, in which the writer stated that he had never, in his experiments on this subject, known the rhythmical contractions of the heart to continue for more than four minutes and a half after complete submersion; and believed if they had once ceased in asphyxia they could not be restored. Cases of recovery after a longer submersion he attributed to the action of the heart having previously ceased in a state of syncope.

(For an interesting discussion upon the same subject, see an analysis of a paper by Dr. Christian in favor of Dr. Sylvester's method, North Amer. Med.-Chir. Review, May, 1861.)

II.—*The Liverpool Fever at Alexandria.* (Medical Times and Gazette, June 1, 1861, p. 588.) By J. F. Ogilvie, M.D., Surgeon to H. B. M. Consulate, etc. (See also N. A. Med.-Chir. Review, July, 1861.)

In the last number of this journal, we called attention to a visit of exanthematic typhus fever to Liverpool, dating from the arrival at that seaport of a number of uncleanly Egyptian sailors. The same crew, transhipped into another vessel, touched at Malta on their return to Alexandria, and left behind them a fever of a malignant type, of which several persons died. On the arrival of the steamer in Alexandria, Dr. Ogilvie tells us, some twenty-eight or thereabout of the crew were admitted into the Native Hospital for rheumatism, meningitis, dysentery, and other non-contagious diseases, but not one with typhus or other contagious fever, of whom five or six have since died. Of seven Englishmen on board, six were affected at the time of landing, or immediately after, with fever, but in different degrees of intensity. In all of the cases, the type of the fever was rather inflammatory than typhoid, and in all these was a degree of fidgety, restless excitement and affection of the nervous system, quite out of proportion to the other symptoms. In only one case was there any symptom leading to a suspicion of a contagious type of fever. All the Englishmen made good recoveries up to the forty-second day after their arrival at Alexandria. No case of sickness, either in the hospitals or in the town, was traceable to the crew of this unfortunate steamer.

III.—*Some Effects of Reflex Nervous Irritation produced by Syphilitic Disease of the Bones of the Skull.* A Paper by Mr. Henry Lee, read before the Royal Medical and Chirurgical Society, May 28, 1861. (Medical Times and Gazette, June 15, 1861.)

This paper seems to be supplementary to one presented at a previous session by the same author. In one of the cases detailed at that time, deafness and impaired voluntary power coexisted with extensive ulceration; in a second, there were long-continued spasms of some of the muscles of the face and body; and in a third, delirium and coma were present. The author remarks that a state of chronic spasm may be produced in blood-vessels as well as in muscles by nervous irritation; and the post-mortem examination in two cases cited showed the irritation to have originated in the bones of the skull at a distance from the origin of any of the motor nerves, and he therefore concludes that as the parts at the base of the brain were healthy, the venous irritation depended upon reflex action. The same action which would produce spasm of the muscles at one time might produce spasm of the blood-vessels at another, and thus interfere with the process of nutrition. To this cause the author attributed the ulcerations. In two of the cases examined post-mortem, the inner table of the skull had been extensively diseased, and had been the cause of disease of the dura mater. In both cases, the parts at the base of the brain were entirely free from disease; and it was particularly noticed that in those situations where the internal table had been removed (in one case artificially) the membranes of the brain were healthy; but in those parts where the diseased bones remained, that the membranes were also diseased. The conclusion drawn by the author was that where portions of bone were exposed by disease, the external and middle tables might be removed by the trephine without any danger; and that where the internal table was diseased, and the locality of that disease was indicated, which it might be, and the exposed external table, then the whole thickness of the skull might be removed by the trephine.

In a case detailed, characterized by periodical attacks of pain in the head, staggering, etc., the author remarks that there was, during the occurrence of the attacks, an affection of the muscles of one particular limb and of the blood-vessels of the same part, as indicated by the bloodless condition of the skin. It was doubtless, like the other cases, an instance in which irritation of the dura mater by disease of the bone had, by reflex action, produced the symptoms which had been described.

IV.—*The Diseases of the Kidneys, accompanied by Albuminuria.* By DR. W. H. DICKINSON. (Medical Times and Gazette, June 8, 1861.)

In a previous essay on the subject, the author maintained, on anatomical grounds, that the disease which occasions the smooth mottled kidney is essentially different from that which gives a granular surface to the organ. The first is characterized by excess of cell-growth within the tubes, and is, in fact, chronic nephritis; while the other is the result of a degeneration commencing in the intertubular structures. The purpose of the present paper is to add the clinical details. These were obtained, in part, from an analysis of 369 well-marked fatal cases of renal disease extracted from the records of St. George's Hospital during a period of ten years, while other particulars were obtained from a more minute examination of cases under the author's notice during life, taking care to use only those in whom the state of the kidney had been attested by post-mortem examination.

We shall endeavor to make our own classification of symptoms, etc., diagnostic of each, from the numerous details furnished in Dr. Dickinson's excellent paper.

TUBULAR DISEASE, (Chronic Nephritis.)	GRANULAR DEGENERATION.
Sex.—More frequent in the male than the female, as 3 to 1.	More frequent in the male, as 2 to 1.
Age.—In early life; attaining its greatest frequency between ages of 20 and 30.	Never seen except in adults; most common after the age of 40.
Causes.—Various causes of renal hyperæmia; exposure to cold, elimination of the poisons of scarlatina and other exanthemata; the irritation of turpentine or cantharides given medi-	Can scarcely ever be attributed to any external cause. Is the result of gradual changes originating in the intertubular tissues of the organ, and depending upon some constitutional

cinally; the vicarious secretion of bile, or the congestion of successive pregnancies.	vice which gains ascendency with advancing years. Those predisposed to gout and tubercle are especially liable.
Duration.—Within 6 months; 26 out of 34 fatal cases under the author's observation terminated within this period, while only 2 survived the year.	Impossible to fix the duration, because of the indefinite nature of its accession; period may vary from 4 weeks to 10 years.
Symptoms. — Albuminuria; dropsy of the cellular tissue, pleuræ, peritoneum, and pericardium, (and frequently in the order mentioned;) diarrhœa, especially in the later stages; pain in the loins; bloated aspect and ivory pallor.	Gradual change from health to infirmity for months, perhaps, as shown by slight fullness of the ankles at first; sharp features; sallow complexion; copious urine, passed with frequency, especially at night. In the later periods, dropsical effusion only sometimes comes on when the urine is no longer profuse; with withered aspect, sharpened features, and a muddy skin.
Head Symptoms. — Epileptic convulsions occur occasionally, sometimes followed by coma, especially in those who have been reduced by vomiting or diarrhœa.	Either epileptic convulsions, or, what is in some measure characteristic, patients often pass gradually into a comatose state without any such warning, the change being preceded by dimness of sight, giddiness, peculiarity of manner, or delirium. Extravasation of blood within the cranium is peculiarly apt to take place in connection with granular disease; the latter was present in nearly one-half of the cases of apoplexy subjected to examination in St. George's Hospital.
Condition of the Urine.—The urine is scanty, except during the later stages, or while a temporary attack is passing away. It is usually acid, and often deposits uric acid and urate of soda. It is discolored with blood in a large proportion of cases, especially at the outset, and yields a bulky precipitate of albumen, independently of any such admixture. The specific gravity ranges from 1010 to 1030; but on the whole does not depart much from the limits of health.	The urine is increased in quantity, except in the later periods, and is usually paler than natural, being comparatively seldom discolored with blood. The albumen is often in minute quantity, and the specific gravity low, varying from 1008 to 1020.
Microscopic Characters.—Renal epithelium is deposited in a natural state, or containing oil-globules, or converted into pus-cells. The fibrinous cylinders are to be regarded as casts only of the	The casts are various in character, but those most often present are of a coarse, granular texture, and may be regarded as very characteristic of the disease.

straight tubes; they are of four varieties, viz.: transparent, uniform glassy cylinders; similar cylinders imbedding entire epithelial cells; casts of granular appearance, containing epithelium in a state of disintegration; and, lastly, such as contain blood-corpuscles. The casts imbedding entire epithelial cells are the most characteristic.

Intercurrent Diseases.—Inflammation of the serous membranes and of the lungs occur frequently.

Bronchitis is of frequent occurrence. Valvular disease of the heart occurs more frequently than can be attributed to accidental coincidence.

The presentation of so interesting and valuable a paper to the Royal Medical and Chirurgical Society elicited remarks by Dr. C. J. B. Williams and others. The former, while commending Dr. Dickinson's researches, stated his views to be, that the anatomical and other peculiarities were different stages of one disease, rather than separate and definite affections. Dr. Gull thought the author should have referred also to a third form of kidney disease, depending on amyloid degeneration of the arteries, associated with scrofula and phthisis; but it was evidently not the intention of Dr. Dickinson, as he himself stated, to give a complete history of the various affections often grouped together as Bright's disease, but to distinguish only the two forms alluded to in his paper.

V.—*Cases of Disease of the Pons Varolii.* By HERMANN WEBER, M.D. (Lancet, June 1, 1861.)

The three cases detailed by Dr. Weber are of great interest, on account of the rarity of the affection. Two of the cases are of especial interest, on account of the isolated and limited lesion, and the comparatively slow progress of the disease allowing time for repeated observations. The third case corroborates some of the inferences deduced in regard to the others, though it really possesses so little else that is interesting in its details, that we have limited our remarks to the other two cases.

In Case 1, affected with tuberculosis of the lungs, the symptoms were at first vertigo and weakness of the limbs of the right side, without alteration of sensibility; three months afterward increased paralysis of movement in the right arm and leg, with imperfect anæsthesia in the left side of the face and tongue, and contraction of the pupils, especially the right; followed in the next month by contraction and rigidity and diminution of sensibility in the limbs of the right side. These symptoms were followed by weakness of those of the left side, and defective mastication, deglutition, and articulation; afterward by vertigo and convulsions, momentary loss of consciousness, but permanent loss of articulation, deglutition, and protrusion of tongue. The paralysis of the limbs of the right side was complete, of the left almost so; there was anæsthesia in those of the right, distinct diminution of feeling in those of the left side. Reflex function of the limbs was not quite destroyed; both pupils were contracted; death occurred under the phenomena of paralysis of respiration.

In Case 2, affected with chronic hydrocephalus and tuberculosis of the lungs, we find symptoms very analogous to those of Case 1. In comparing the symptoms of the two cases during the first period, when the anatomical alterations were almost the same in both, we find, as principal differences, that in Case 2 the limbs of the side opposite the central lesion were attacked by fits of convulsions previously to their being paralyzed; that further, in the same case, pain in the side of the face corresponding to the lesion preceded the anæsthesia; and that the same child had later fits of general shaking—phenomena which were absent in Case 1. These phenomena of one case only may not be due necessarily to the palpable local affection.

Many symptoms correspond in the two cases, viz.: motor affection, first of the arm, then also of the leg of the side opposite to the anatomical lesion; attacks of vertigo; contraction of the pupils, more so of the one opposite to the tumor; sensitive affection of the face and tongue on the side of the tumor, (due to the relation of the latter to the fifth nerve;) the sensibility of the limbs of either side unaffected, until to the second period, when, in Case 1, anæsthesia came on in those of the side opposite to the lesion; wasting of the paralyzed limbs, etc., and integrity of the intellectual functions and special senses throughout.

In the post-mortem examination of Case 1, a tubercle of the diameter of half an inch was found in the substance of the left half of the pons Varolii, in close proximity to the superficial origin of the left quintus, with softening of the surrounding tissue, extending posteriorly almost to the floor of the fourth ventricle, and toward the right side beyond the middle line. There was hemorrhage into the softened tissue, and the left trigeminus was thinner than the right. In Case 2, in addition to the phenomena of tubercles of the lungs and tubercular meningitis, with increased amount of fluid in the dilated ventricles, a tubercle larger than a pea was found in the lower portion of the right half of the pons, near the right quintus, with atrophy of the latter. The nerve-tissue of the pons surrounding the tubercle was softened, of a yellowish-red color, exhibiting under the microscope many granule corpuscles, (exudation corpuscles.)

The physiological inferences which offer themselves are, according to Dr. Weber:—

1. That the nerve-fibres for the limbs, passing through the pons, as well motor as sensitive, decussate below the pons.

2. That there are no sensitive fibres for the limbs in the anterior (inferior) portion of the pons.

3. That the posterior (superior) portion of the pons contains sensitive fibres for the limbs.

4. That the intellectual functions of the brain, and also of the special senses, are independent of the pons.

5. That nerves regulating the state of the pupils are in close connection with the pons.

6. That extensive lesion of the pons is associated with disturbance of deglutition, articulation, and respiration.

VI.—*On Sour-smelling Perspiration in Acute Rheumatism, and its Significance as a Symptom.* By THOMAS INMAN, M.D., Physician to the Royal Infirmary, Liverpool. (London Medical Review, June, 1861, p. 582.)

Theories respecting acute rheumatism have been built on copious sour-smelling perspiration as a symptom of this disease, and distinct lines of practice founded upon them. For instance, it has been maintained, as Dr. Inman remarks, that sweating is an effort of nature to eliminate some poison from the blood; while another view is, that as the sour odor is due to lactic acid, so that acid must, in some way, be concerned with the poison to be eliminated. We therefore find medical men, who adopt these theories, encouraging perspiration, giving daily purges, and acting freely on the kidneys with their diuretics; or else they administer alkalies to neutralize the acid in the blood.

The writer asks the following questions, and answers them himself:—

1. *Is it a fact that all cases of acute rheumatism are attended with a sour-smelling secretion from the skin?* Perspiration is absent in about one-third of the cases which have come under his observation, and has been excessive only in one-fourth. A sour odor is not perceptible unless the sweating is very considerable.

2. *Does the occurrence of profuse sour sweat relieve the other symptoms;* and

3. *Are those cases the mildest in which the perspiration is the freest and sourest?* Dr. Inman has never yet seen the symptoms relieved by the occurrence of perspiration, or by its excess. After an experience of over twenty years, he has arrived at the conclusion that the patient improves as the skin becomes dry; that a return of perspiration is always accompanied with an aggravation of the other symptoms, and that those cases are the worst in which the sweating is most excessive in quantity and most acid in odor.

4. *Is the sweat sour when first it is produced, or is its odor the result of decomposition?* If we can ascertain—1, that the perspiration when it first appears is free from any unusual odor; 2, that no sour smell is noticed after a complete change of body linen and sheets, and for a considerable period subsequently, we have *prima facie* proof that it is not the natural perspiration alone that gives rise to the odor.

5. *Does a similar sour odor accompany perspiration in other diseases, and, if so, have they anything in common with acute rheumatism?* Various diseases, incidentally attended with sour sweating, are cited by the author; but they have little in common except great poverty of the blood as regards globules, richness in fibrin, and constitutional debility.

6. *Why is the perspiration of a rheumatic patient more frequently sour than that of other people?* It is for this reason, that when the sweating is abundant, the pain is always so severe that the patients cannot endure the motion consequent upon an attempt to change their body linen, sheets, etc. There is every reason to believe that the sour smell is the result of decomposition *after* the fluid has been secreted, and deposited outside the body; consequently no theory can fairly be founded upon the change as regards a poison being eliminated, that poison being lactic acid.

7. *Are the results of the eliminant or alkaline plans of treatment so conspicu-*

ously successful as to warrant us in taking them as corroborative of the theories upon which they are founded? Dr. Inman has never satisfied himself that the sour smell has diminished under the use of alkalies so rapidly as it does when lime-juice alone is employed. But all conclusions as to results of medical treatment were vitiated as soon as it was ascertained that in some few instances the whole symptoms of acute rheumatism would subside rapidly without any special treatment whatever. On the other hand, it is true, that the majority of cases evince no tendency to spontaneous cure, that lime-juice alone does not always cure rapidly, and that patients do get well when taking diaphoretics, purgatives, and alkalies. Time and average success are adduced in favor of the lime-juice treatment.

VII.—*The Value and the Fallacy of Statistics in the Observation of Disease.* By David W. Cheever, M.D. (Boylston Prize Essay, Boston, 1861.)

An immense number of reasons why statistics should be regarded as unreliable and scarcely ever worthy of being appealed to, can be readily collected together by one who, like Dr. Cheever, makes their collection a specialty. But they have their value in a limited degree: and far greater in some departments than in others, as the writer himself states. This value descends in accuracy by a progressive ratio, and in the following order: mortality and births; hygiene; etiology; pathology; therapeutics. We find the statistics reliable in proportion to the simplicity of the *data* from which they are calculated.

The author refers to facts established by the numerical method, such as the conclusions that tubercles in any organ of the body, after the age of fifteen years, involve their presence in the lungs; that chronic peritonitis, too, indicates pulmonary tubercles; that phthisis so often commences in the upper lobes, that we have been led to call those cases where the indications of its presence are found first at the base of the lungs, the *anomalous* development of tubercles, etc.; points on which no theory and no speculation could ever have led to these results of numeration and averages.

Since the use of a very large number of observations, however, in every case is impracticable, how shall we know what value to attach to statistical conclusions derived from a limited series of facts only? By the calculation of probabilities, which must be received as demonstrated authority by those who do not choose to study it mathematically. But this method proves to us that the probability of a given event happening does not exactly coincide with the actual number of times it has been observed to happen, but varies between limits somewhat greater and somewhat less than the number observed; and that these limits, moreover, are wider in proportion as the observations are few, and approach nearer as the observations become more numerous.

Let us suppose, for example, as mentioned by Dr. Bartlett, that 500 cases of a given disease have been subjected to a given treatment, with the result of 100 deaths, and 400 recoveries; and another set of 500 cases of the same disease have been subjected to a different treatment, with the result of 130 deaths and 370 recoveries. In the first class, the ratio of mortality is as 20,000 to 100,000; in the second class this ratio is as 26,000 to 100,000; the difference between the two being 6000 in 100,000. An application to these numbers of the law of probabilities, as deduced by the mathematical formula of M. Gavarret, shows that the limit of possible variation is equal to 7508 in 100,000.* We cannot reasonably conclude, therefore, that the first method of treatment is better than the second, because the difference in the result *falls below* the limit of possible variation by the calculation of probabilities; a variation which may be the effect of chance.

But by extending our observations to twice the number of similar cases in which the ratio of mortality remains in each class the same, we find the following results: the limit of possible variation, ascertained by the calculation of probabilities, when applied to 1000 cases, instead of 500, sinks from 7508 in 100,000 to 5306 in 100,000; which is *surpassed* by the observed difference in the ratio of mortality, this being as 6000 in 100,000. Here then we have a positive demonstration of the superiority of the first mode of treatment over the second; and this demonstration obtained solely by increasing the number of our observations.

In all statistical calculations, each series of relationships and phenomena must be fixed enough to be comparable; must consist of large numbers; the limits of variability must be determined by the calculation of probabilities; and the series of possible causes must remain uniform. Dr. Cheever has almost exhausted the discussion of the value of the numerical method of observation.

VIII.—*A Statistical Account of* 476 *Cases of Acute Rheumatism admitted into the Wards of the Middlesex Hospital during the Years* 1853 to 1859 inclusive. By GEORGE WILLIAM FLEETWOOD BURY, Esq., F.R.C.S., etc. (Brit. and For. Medico-Chirurg. Rev., July, 1861.)

From a large group of cases, such as are embraced in the tables of Mr. Bury, certain practical deductions may be made, having reference to the points of interest connected with the disease alluded to. Thus, we learn the influence of sex, age, hereditary predisposition, etc.

Complications.—Omitting entirely, as complications, any example of simply old heart disease—the result of previous rheumatic attacks—and including only those instances of cardiac mischief which were considered either to have originated with the present rheumatic attack, or those in which, during the present attack, new cardiac disease had been grafted on old structural and rheumatic changes, we find that 253 of the cases, or about 53·7 per cent. of those attacked with acute rheumatism, suffered from heart complication of one kind or another. Women suffered in a much greater proportion than men from such complications; in the latter, the percentage was 45·3; in the former, 62·2.

Endocarditis was four times as frequent a complication as pericarditis, and twice as frequent as endo-pericarditis.

Hereditary tendency.—In 67 cases, or rather more than 14 per cent., relatives were subject to rheumatism, the predisposition seeming to be much more frequently inherited from the father than from the mother, and its probable derivation from both being of comparatively rare occurrence.

Age.—From the table of relative frequency of the affection, and its heart complications, at various ages, we deduce the following conclusions: Acute rheumatism is a disease of the period of life embraced between 15 and 30, occurring especially during the first quinquennial interval, and then diminishing as age advances. The heart complications, in the cases observed by Mr. Bury, prevailed at irregular periods, as is exhibited in the following order of frequency: 15 to 20 years of age, under 10, between 10 and 15, 20 and 25, 30 and 35.

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* Philosophy of Medical Science.

Joints affected.—Distal joints of a limb are more liable to be first attacked, and a tendency exists, so great as almost to amount to a rule, for the disease to commence in the lower extremity and travel upward with a certain regularity. The joints of the lower extremity alone were affected exactly twice as often as those of the upper extremities alone. The erratic and diffusive tendency of the disease is shown in the fact that the joints of both extremities have been attacked more than twice as often as all the other cases put together.

Duration of attack.—The average length of stay in the hospital—49 days—may, for several plausible reasons stated, be considered as fairly representing the duration of the attack.

Period of occurrence of heart complications—(their advent dating from the first day on which any distinctly abnormal sound was heard.) They may occur as early as the second day of the disease, and during the first thirteen days the liability is at a maximum. The fifth and eighth days are those of greatest frequency of complication.

In endo-pericarditis, endocarditis is said by Mr. Bury generally to precede pericarditis by a day or two at the least, though we confess to an admiration and doubt of such nice diagnostic skill as can decide upon the non-existence of either one form or the other of cardiac inflammation but a few hours before the appearance of both conjoined.

Previous attack.—Nearly one-half the cases had suffered previously; about 66 per cent. of these but once.

Period of the year during which acute rheumatism is most prevalent.—June and October, between which there are so few points of analogy, are, inexplicably enough, the months of greatest frequency.

OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

BY WM. B. ATKINSON, M.D.,

LECTURER ON OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

I.—*Treatment of Cases of Abortion in which the Membranes and Placenta are retained.* By DR. PRIESTLEY, London.

The dangers and morbid conditions arising from membranous and placental retention are—flooding; decomposition of the uterine contents, leading to local inflammation of the uterus and surrounding tissues, to phlebitis and phlegmasia dolens, and to general poisoning of the system, as evidenced by fever, peritonitis, rheumatic pains and abscesses; sub-involution of the uterus; and the generation of some of the forms of mole out of the tissue left in the uterus. The entire absorption of the placenta is uncertain.

The treatment by ergot, galvanism, or injection of cold water is very unreliable. The safest and best plan is the introduction of the fingers into the uterus, and the removal of the contents of that organ. Dr. Priestley had never known this to be followed by evil results. Of course, rough and careless manipulation is to be avoided: less risk is incurred by this method than by the retention of the placenta. It is important to effect the removal before putrescence, or contraction of the os. In six hours after the escape of the embryo, the placenta may be removed. The patient should be placed on her back, the thighs flexed on the abdomen, and while, with one hand, the operator steadies and depresses the uterus, the other is passed into the vagina, the os gently dilated with the index finger and the second next passed, if required. These form the best and most sensitive forceps. Chloroform may be administered if necessary; if fever, etc., be present as in cases of delay, the operation is not advisable. Dilatation may be effected by sponge-tents when necessary.—(*Med. Times and Gazette*, May 18, 1861.)

II.—*A new Instrument for the Reduction of Prolapsed Umbilical Funis.* By J. G. WILSON, M.D., Glasgow.

The instrument is a French invention, the inventor's name not stated. It consists of two finely polished whalebone rods, one of which is straight, with a handle of the same material, the other terminates in a hook, and slides upon its fellow by means of silver rings. The movement of the one upon the other is limited by means of a stop to about an inch, to prevent their separation. The hook is intended for the funis, and by the approach of the other rod is temporarily converted into a ring; length, including handle, 18¼ inches. The rods are as thick as the tubes of Gooch's canula. The prolapsed cord is grasped and carried up beyond the presenting part, and then released by separating the rods. Its advantages are simplicity of construction and easy application. In two cases in which Dr. Wilson employed the instrument, he succeeded perfectly in carrying up the funis; nor was it again prolapsed.—(*Glasgow Med. Jour.*, April, 1861.)

III.—*The Most Efficient Method of Removing the Placenta.* By DR. CREDE.

Dr. Crede insists on the removal of the placenta by uterine action alone, and objects to the introduction of the hand within the genitalia except in rare cases. His method consists in excitation and increasing of uterine activity; contraction is to be induced by friction and irritation of the fundus and body of the uterus, with the hand over the abdomen. It should be performed at once after the birth of the child. The friction at first should be gentle, then gradually increased. The author has in very many instances succeeded in a quarter or half an hour in inducing the necessary contraction, even where uterine action was ever so slight. When the contraction is strong, he grasps the fundus in the hollow of his hand, while the fingers make gentle pressure; no inconvenience results to the patient except the increased pain of this forcible contraction, which is more than compensated for by its rendering unnecessary the introduction of the hand within the sensitive parts. The womb remains well contracted, hemorrhage is less likely to occur, and inversion cannot take place.—(*Monatsschrift für Geburtskunde und Frauenkrankheiten*, April, 1860; *Amer. Med. Monthly*, June, 1861.)

IV.—*Inflammation of the Breast.* By THOS. WM. NUNN, F.R.C.S., London.

Of 72 cases which fell under the observation of Dr. Nunn, 58 occurred during lactation, 7 during pregnancy, and 7 in women neither pregnant nor lactating. Of the 58, 56 per cent. occurred during the first two months of lactation; during the subsequent seven months only 14 per cent., and 29 per cent. after the ninth month. Over-lactation produced a cachexia, marked by a proneness to inflammation, dryness, and chalkiness of the skin, drowsiness, constipation, loss of appetite, and physical and mental lethargy. He found either breast equally liable, and the lower lobes twice as often affected as the upper.

Concerning the treatment, he thought continuous poulticing was decidedly mischievous, and hindered recovery, except where deep sympathetic pain and hyperæsthesia of the surface existed, when warm poultices are soothing. The recumbent position is of the first importance. In Dr. Nunn's hands, belladonna had not given encouraging results, though he could not doubt that in the earliest stage of congestion and as a preventive, it had a beneficial influence. The moment of opening the abscess should be vigilantly watched for, as the rapidity of cure depended upon this. He strongly advocated the use of galvanism of a low form of intensity, for the treatment of sinus and painful œdema after the acute symptoms have subsided.

DR. BRAXTON HICKS had found equal parts of extract of belladonna and glycerin, applied externally, of great value in checking the secretion, at the same time giving internally iodide of potassium in 8-grain doses.

DR. TYLER SMITH cured cracks in the nipples by painting them with a strong solution of nitrate of silver. Abscess could often be prevented by belladonna, smearing the breast with equal parts of the extract and water. Bromide of potassium internally, and as a lotion, seemed to have a specific effect in diminishing the mammary secretion.

DR. TANNER had great faith in belladonna, which he thought was not employed with sufficient freedom. The best plan was to paint the whole gland, and then apply a cold bread and water poultice twice or thrice a day.

MR. GERVIS regarded the delay in putting the child to the breast after delivery as a not unfrequent cause of acute mammitis. The child is not allowed to suck till the third day, and then the breasts are swollen and tender, the nipple retracted, and in drawing it out, the manipulation predisposes to inflammation.

DR. MADGE thought it not always necessary to wean the child in such cases, as by strapping the affected side all irritation and inflammation frequently subside quickly, and the mother is enabled to continue with the other breast.

DR. GIBB thought that changes in the milk in prolonged lactation often caused abscess. The chief of these changes is a fermentation of the sugar at the moment of secretion from constitutional causes, giving rise to the formation of vibriones and monads, producing great irritation and a tendency to suppuration.

DR. RICHARDS thought nine-tenths of the cases were caused by sore nipples, which by their pain cause the mother to desist from suckling, resulting in engorgement, etc. When suppuration occurs, hot fomentations are best, and an early evacuation of pus. Local depletion and belladonna are worse than useless.

MR. OWEN had found great benefit, in sore nipples, from a lotion of borax, oil of almonds and water.—(*Lancet*, June 22, 1861.)

V.—*Abortion; Cold a Principal Cause.* By Dr. George J. Bennet, N. Y.

Cold, as a cause of miscarriage, has been overlooked, though an ordinary cold, with the attending derangement of health, more frequently than any other cause produces this occurrence. Congestion of the pelvic viscera results, more especially when the uterus is in a pregnant state, separation of the placenta, hemorrhage, external or internal, follow, and, consequently, fœtal death.

In threatened miscarriage we must restrain the flow of blood, whatever the cause. If the cause be cold, with derangement of digestion, we find mild laxatives and alteratives best, as syrup of rhubarb and castor oil, āā f℥ss, cream of tartar, blue pill, etc., combined with opiates. Ipecacuanha, with nitrate of potassa, where febrile excitement exists, is a valuable anti-hemorrhagic, anti-spasmodic, and equalizer of the circulation.—(*American Medical Monthly*, May, 1861.)

VI.—*Puerperal Peritonitis treated with Opium.* By G. P. Cady, M.D., Nichols, Tioga County, N. Y.

C., aged 35, was delivered of her fifth child after a severe labor. On the third day she was attacked with peritonitis; had during the night several chills; her skin was dry and hot, countenance anxious, tongue furred, respiration hurried, pulse 140; bowels very tender and painful, with tympanitis, and sickness of stomach. Gave her four grains of opium at nine, and again at twelve o'clock, and then two grains every two hours for four hours, when she was thoroughly narcotized. She lay quiet, her skin was moist and itching, eyes suffused, pupils much contracted, respiration ten per minute, and sighing. She had no pain, but was easily roused. For four days complete narcotism was maintained, sometimes by two grains every hour, sometimes every two hours. On the third day she vomited several times, but the medicine was repeated oftener, and it subsided. On the fifth day the pulse began to fall; on the sixth, it was 85, and from that time she took four grains each of opium and quinia daily, for several days, when her appetite returned, and both were omitted. Result, a complete cure. She took thirty-four grains the first twenty-four hours, and then twenty to twenty-five per day.—(*American Medical Times*, Aug. 3, 1861.)

VII.—*Phlegmasia Dolens cured by Collodion.* By Dr. R. Latour, Bordeaux.

Mad. ———, aged 20, was attacked about eleven days after delivery with phlegmasia dolens in the left leg, the swelling of which, by the third day, had extended from the upper portion of the thigh down to the ankle.

Dr. Latour attempted to prevent its extension upward by the application of collodion to the part. Immediately the progress of the inflammation ceased, and by the next day its intensity had much moderated. The coating was carried over the whole affected part, with the exception of the foot, which continued to swell. This also was covered, with a good result. By the seventh day after the institution of this plan of treatment, the parts had returned to their normal condition, and she was able to walk about as usual.—(*Jour. de Méd. de Bordeaux*, Jan. 1861.)

VIII.—*Case of Ovariotomy.* By P. S. Mootoosawmy Moodelly, G. M. M. C., Manargoody, Tanjore.

C., aged 24, admitted February 16, 1859, with a tumor on her left side. Had been tapped several times. Married ten years; had one child; menstruation ceased for last twenty-eight months. Swelling came on gradually, with occasional pain and febrile disturbance. As it increased, the pressure produced nausea and vomiting, oppression of respiration, and œdema of the legs. The abdomen now measures forty-four inches in circumference. Fluctuation is distinct in the tumor. General health much impaired. Tapping relieved her of twenty-six pints of a thick viscid brownish fluid, which coagulated on the application of heat. The fluid having reaccumulated, the operation of extirpation was performed March 6th. After the usual preparation, chloroform was freely administered, and an incision was made an inch and a half long in the median line, about an inch and a half below the umbilicus. No adhesions were found, except to the omentum at the upper portion. The incision was carried down three inches, and the tumor was tapped, discharging a thick, viscid, dark-brownish fluid, of the consistence of syrup, to the amount of several pints. The tumor now appeared thick and solid. The wound was slightly enlarged, and the mass drawn out without much difficulty. It was attached by a large neck to the broad ligament of the uterus. A double ligature was passed through it, and tied on each side, after which the mass was removed about half an inch below the point of ligation, no hemorrhage ensuing. The right ovary was healthy. The ligatures were allowed to recede into the abdomen, and the wound was closed by sutures and straps.

The after-treatment was conducted according to the emergency of the presenting symptoms. The ligatures were withdrawn on the forty-fourth day, and she left the hospital on the fifty-fourth, perfectly well. Fifteen months after the operation she remained well, the catamenia having returned. The tumor, which measured thirty-two inches in circumference, consisted of a thick sac, and several small cysts on its margin. The whole weighed twelve pounds and thirteen ounces, and contained twenty-one pints of fluid like that withdrawn.—(*Madras Quart. Jour. Med. Sci.*, July, 1860.)

IX.—*Ovarian Dropsy; Rupture of the Cyst internally; Cure.* By Dr. Milner Barry, London.

Occasionally, in cases of ovarian dropsy, rupture of the cyst occurs, which is generally followed by death, either from collapse or peritonitis; sometimes by a refilling of the cyst, rarely by a perfect cure.

H. A., aged 32, had ovarian dropsy for two years. She was as large as a female at the eighth month of pregnancy. She was treated for some weeks, and then left the infirmary without any apparent change. Some six months after, she tripped, and fell violently forward on a brick floor. For some days she was ill, but every day became smaller, and in three weeks had returned to her normal size. She could not recollect any increased action of the bowels or bladder at the time. Her catamenia are regular, and she has had no return of the dropsy, now some four years since.—(*Medical Times and Gazette,* July 13, 1861.)

X.—*Enlarged Ovary prolapsed into the Recto-Vaginal Cul-de-sac, and obstructing Labor; Rupture of the Uterus.* By DR. J. C. HUTCHINSON, N.Y.

The patient, aged 35, was in labor with her second child, the pains having commenced on the previous day. The os was well dilated, the membranes protruding, the vertex presenting, and the pains severe. A tumor was detected between the rectum and vagina, about the size and shape of the half of a large apple. In consequence of the pressure of the head above, the tumor could not be moved. An opiate was given, and sleep procured. At 12 M. the next day the forceps were applied, but without effect. In the evening vomiting commenced, the pains had subsided, and death resulted by the next morning.

The post-mortem examination revealed a rupture of the uterus, which was well contracted, the child being in the abdominal cavity. The tumor was the right ovary enlarged, containing bone, hair, and a soft matter like stearine. A bony tumor projected posteriorly from the body of the pelvis, to the distance of three-fourths of an inch. All the pelvic diameters were diminished.—(*American Medical Monthly*, July, 1861.)

XI.—*Uterine Hæmatocele.* By HENRY MADGE, M.D., London.

DR. MADGE read a paper before the Obstetrical Society upon this subject, in which he related the case of a lady who, having suffered from local peritonitis, went out too soon, was attacked with a profuse menstrual discharge, and was brought home in a state of collapse. When reaction came on, peritoneal symptoms were evident in the lower part of the abdomen, and a large tumor was found extending from the umbilicus into the pelvis; as found by rectal and vaginal examinations, the uterus was retroverted; the severe symptoms subsided, and about a month later, a discharge of blood took place per rectum, seeming to empty only the pelvic portion of the tumor. When the monthly period arrived, the discharge lasted two days, and on the second day, anæmia, partial collapse, and pain came on. It was evident that internal hemorrhage had again occurred. She rallied, when phlegmasia dolens attacked the left, and a week after, the right leg. When the next menstrual period arrived, there was a profuse discharge of clots and altered blood per rectum, for two days, to the amount of three or four pints; the abdominal tumor disappeared, and death ensued from prostration.

The post-mortem revealed a cavity in the pelvis, containing clotted blood, with bands of torn false membrane. The capsule of the left ovary was distended to the size of an orange, and divided into two cells by a band, each cell containing blood and clots. A small portion of the ovary remained. The right ovary was congested and fixed by adhesions. The case was one of "intra-peritoneal uterine hæmatocele," produced by a common cause, bleeding from ovarian vessels at menstruation.

DR. TYLER SMITH considered the affection to be essentially a form of ovarian or Fallopian menstruation, vicarious in character. Thus the blood accumulated, and by lymph being thrown out by the peritoneum, the sac is formed. The escape was by ulceration through the rectum. He had seen three cases in which this had occurred which resulted in cure. He would be strongly inclined to puncture the tumor through the rectum, and give emmenagogues to produce healthy menstruation.—(*Lancet*, March, 3, 1861.)

2.—*Ibid.* By DR. JACKSON, Boston.

DR. JACKSON reported to the Boston Medical Society a case where death occurred in a few hours, from a discharge of blood into the abdominal cavity. The Fallopian tubes were injected, and the left one ruptured, through which opening the blood had evidently passed, as a clot hung from the aperture. The patient was every day expecting her menstrual discharge.

3.—*Ibid.* By DR. GAY, Boston.

The patient had for some years experienced trouble at her menstrual periods. Four weeks ago, the discharge was suddenly checked by her taking cold. She was seized with intense bearing-down pains and great soreness, both of which steadily increased. She could not walk or stand straight, and was generally obliged to lie upon her right side. A vaginal and rectal examination revealed a painful swelling near the uterus and extending toward the sacrum. The patient lost flesh rapidly, and became very feeble; there were only short intervals of ease from pain. A general fullness of the abdomen was seen below the umbilicus. The case was diagnosed as *retro-uterine hæmatocele*, and an incision an inch long was made in the deep portion of the vagina. Large quantities of coagulated blood flowed out, and the discharge continued for several days. Two weeks after the operation and six weeks from the attack, her catamenia appeared, lasting two days, not profuse or painful.

She is now daily improving, with scarcely any vaginal discharge, and the swelling has entirely subsided. Many fetid "grayish pieces of flesh, like *torn rags*," were discharged.—(*Boston Med. and Surg. Jour.*, May, 1861.)

XII.—*Fungosities of the Uterus.* By DR. GOLDSCHMIDT, Strasburg.

The fungosities are formed by a simple hypertrophy of the elements which enter into the normal composition of the uterine mucous membrane. The elements which are transformed are the cells, fibres, glands, and capillary vessels. The disease may be only a hyperæmia, but more frequently the hypertrophy continues until soft, pulpy excrescences are produced, which are easily removed by an instrument or the finger-nail. They vary in size from that of a millet-seed to that of an egg. Occasionally a pedicle is formed, and they resemble strongly a polypus. The disease appears at all ages, but generally between 20 and 30. The predisposing influences are tedious labors and abortions. The principal and almost constant symptoms of this affection are hemorrhages and pains. Among their complications, the most important are softening of the uterine tissue, and suppurative inflammation of the ovaries. The hemorrhages generally become serious, causing great anæmia. Conception is hindered and abortion produced by these fungi. Cauterization and injections are useless; abrasion must be practiced with the *curette* of Recamier, or the finger-nail. The latter is fully as useful and less dangerous than the former; hence the curette should only be used in those cases where the former method is impracticable, as from the impossibility of passing the finger into the cavity. In some instances, cauterization with the nitrate of silver becomes an adjuvant, by modifying the surface thus scraped; scarcely an accident can occur from the operation, and the result in a vast majority of cases is entirely satisfactory; the hemorrhage and pains cease immediately, the uterus properly performs its functions, menstruation is regular, and conception again becomes possible.—(*Gaz. Med. de Strasbourg; Gaz Med. de Paris,* Mai 4, 1861.)

XIII.—*Amenorrhœa; its Treatment.* By J. Y. SIMPSON, M.D., etc., Edinburgh.

The symptomatic treatment of amenorrhœa will be that proper to restore the system to its normal standard, as the relief of the *asthma* which sometimes though rarely accompanies it. The readiest is the inhalation of chloroform, by breathing a few drops from the palm of the hand, using it more freely as may be requisite. We may also use carbonic acid gas, developed in a beer bottle, from a mixture of equal parts of crystallized bicarbonate of soda and tartaric acid, with about a tumblerful of water, and inhaled through an india-rubber tube through an opening in the cork. Leeches to the top of the sternum are useful when the health will permit, or dry cups in other cases, over the chest, before and behind.

Neuralgia.—Here the narcotics may be used, but still better, the solution of the arsenite of potassa, two drops thrice a day. If a rheumatic taint is present, thirty or forty drops of the tincture of actæa racemosa three or four times a day, in a little water, will be beneficial. Locally, apply sedative and anæsthetic liniments, or inject subcutaneously a watery solution of morphia. The neuralgic headache is often speedily relieved by heat to the forehead, as by a sponge squeezed out of hot water, or by mustard or turpentine. When chronic, admirable results have been obtained from nickel, in the form of the sulphate or phosphate, in doses of half a grain or a grain three times a day.

Eruptions.—Acne, which is wont to appear each month, when persistent may be attacked with the oil or butter of antimony, applied with a brush, and neutralized speedily with bicarbonate of soda. If it lose its effect, applications should be made alternately of citrine or other mercurial ointment, and of some of the preparations of iodine. The latter remedy stains the skin, so that many refuse its use, and hence a preparation of Dr. Arkwright, of Accrington, is best. This is composed of one part of tincture of iodine and two parts of the milder aqua ammonia. This mixture, which is at first brown, after standing forty or fifty hours becomes quite clear and colorless, and may be applied to the skin two or three times a day for a long time without producing pain or excoriation. Locally, Rumex ointment, or, if the eruption is very irritable, bismuth or cucumber ointment, with a drachm of officinal prussic acid added to each ounce. Internally, small doses of arsenic are often advisable.

The *constitutional* treatment, of course, would be according to the indications—deplete the plethoric, and give tonics to those below par. Especial attention must be given, in cases of dyspepsia, not to impose upon a stomach incapable of digestion. The most serviceable tonics are iron, manganese, zinc, arsenic, especially the phosphates of the first three.

Specific treatment will consist in the use of *emmenagogues,* of which the best is iron. Care should be taken not to give this remedy in doses sufficient to overload the digestive canal and impede its functions, which is the great mistake in the employment of iron.

External applications, as cupping-glasses, poultices, and various irritants, have been applied to the mammæ, or over the sacrum, or leeches to the anus in plethoric patients. The feet may be placed in hot water for four or five nights every month, or the hip-bath may be employed.

Injections into the Rectum and Vagina.—These are with a view of producing an excitement of the pelvic viscera, and thus causing a flow to the parts. The injections may consist of aloes, etc., thrown into the rectum, or aqua ammonia, f℥j, in a cup of milk, thrown into the vagina. The latter is regarded by the Italians as one of the most certain measures for restoring the catamenial flow.

Emmenagogues applied to the Uterus.—Nitrate of silver to the cervix has been found of service by the French. But the best means will be to apply direct stimulation to the uterus or uterine cavity, as the nitrate of silver, cantharides, or iodine. These may be applied by the porte-caustique of Lallemand, of sufficient length, and curved so as to adapt it to the uterine inclination. When charged, it is introduced into the interior of the uterus, about the menstrual period, and rotated twice or thrice. This has produced menstruation in a few hours.

Dry-cupping the interior of the uterus may be employed by means of a tube like a male catheter, pierced with thickly-set small orifices, for about two inches from its extremity, and having an exhausting syringe at the lower end. This, however, does not act purely as a dry-cup, for it is frequently found to fill with blood after being exhausted. Generally, several days are required before this effect is obtained.

Where the ovaries require stimulation, it is better to use the *galvanic intra-uterine pessary.* This is a small copper bulb, from the middle of which rises a stem, made half of copper and half of zinc, about two and one-third inches in length. The half next the bulb is copper, and the other is zinc. The stem is introduced within the cavity of the uterus, and there is on the other side of the bulb an opening, in which a staff may be fixed, with which the instrument may be carried up into its place. A gutta-percha pessary may be placed below it, to prevent it slipping. The whole should be removed occasionally, and the zinc cleansed from the white crust which soon accumulates upon it. This pessary has never produced any bad results, and has frequently caused an immediate improvement in all the symptoms. "*Probably other kinds of foreign bodies lodged there would produce much the same effect; and I have treated cases of amenorrhœa with success by the introduction of a stem-pessary made entirely of copper or of German silver.*"

Electricity and *galvanism* have also been found of value; but to apply them a special form of conductor is needed. When the affection is connected with an *under-sized uterus*, the galvanic pessary becomes most useful by developing the organism. Where the atrophy is great, of course this means will fail.—(*Med. Times and Gaz.*, May 18, June 15, 1861.)

2.—*Ibid.* By DR. ALTHAUS, London.

In young and unmarried women, Dr. Althaus has found *electricity* a valuable emmenagogue. Much depends on a proper knowledge of how to use the remedy, as well as perseverance in its employment. "As to the parts of the body to which the current should be directed, I may add that Faradization of the skin of the soles of the feet by means of wire brushes, or of the abdominal parietes by moistened conductors, and finally the application of one conductor to the nape of the neck, and of another over the os pubis, are the most effectual methods in cases of this kind."—(*Med. Times and Gaz.*, June 22, 1861.)

XIV.—*Hysteria treated by Veratrum Viride.* By Dr. G. M. STAPLES, Dubuque, Iowa.

In the treatment of this affection, Dr. Staples regards as an important indication the controlling of the circulation by cardiac and arterial sedatives. He believes that no other remedy is comparable with the veratrum viride for this purpose.

Mrs. P., aged 25, of highly nervous temperament, during her catamenial period, four months ago, received a fright, which occasioned *suppressio mensium* and convulsions. The attacks continued, sometimes daily, sometimes but once a week. The menstrual discharge returned in six weeks, and remained normal. In one attack the convulsions lasted sixty hours, almost without cessation. She had been treated by intelligent physicians with the usual remedies, but without avail, and her general system began to suffer.

Dr. Staples placed her upon the use of the fluid extract of veratrum, six drops every two hours, and she was continued under its influence. After the second dose the disturbance disappeared, but reappeared upon the discontinuance of the remedy. It was renewed, and continued three weeks, with the effect of producing a permanent cure.

In consequence of tenderness between the scapulæ, counter-irritation along the spine was also employed.

During the treatment violent catharsis was produced by the remedy, after the action of a cathartic. This would appear to militate against the opinion expressed by Dr. Otterson in the March number of the *American Medical Monthly*, who says that "veratrum is not cathartic at all."—(*Med. and Surg. Rep.*, May 18, 1861.)

XV.—*Irritation of the Urethra in Females.* By JOHN HUNTER, M.A., Manchester.

Having encountered several cases not particularly described in the books, Dr. Hunter gives a sketch of three cases, occurring in a female of advanced age, in one of middle age, and in a young woman.

Mrs. C., aged 72, for fourteen years suffered with incontinence of urine, and a constant desire to void the urine, but only with an aggravation of her sufferings. The external parts appeared and felt natural, but the urethra, from the meatus up, was very red and congested. On the introduction of a catheter, the whole urethra was found to be exquisitely tender. The bladder did not seem to be affected. The urine was not more acid than natural. The treatment consisted in the use of alteratives and small doses of liquor potassæ. Locally, a little warm water was injected to wash away the adherent mucus, taking care that the nozzle of the syringe was fully introduced, and that it did not impinge on the walls of the urethra. After this a syringeful of nitrate of silver, five grains to the ounce, was thrown up, and allowed to come away itself. This was repeated daily, and gradually the irritability became less, and the urine could be longer retained. The cure was complete and permanent in a fortnight.

M., aged 50, had suffered in a similar manner for four years. She was compelled to get up many times in the night to relieve the bladder. The urine was much clouded with mucus. The treatment, as above, did not do more than alleviate in this case; hence the following plan was adopted: After the daily injection, the patient was turned, so that her feet rested on the bolster of the bed; the pelvis was raised by means of pillows, and the shoulders depressed, so as to throw the urine away from the neck of the bladder. She was then instructed to hold the urine as long as possible, and when the desire could no longer be resisted, the urethra was previously anointed, by introducing an uncut quill smeared with the dilute nitrate of mercury ointment. This plan, by preventing the irritating urine from touching the walls of the urethra, allowed time for the passage to be healed, and recovery soon followed.

G., aged 22, had suffered from childhood. The same treatment was adopted, with the addition of an injection of a little sweet oil after the nitrate of silver. After she had much improved, an attack of gastritis caused her death.—(*Lancet*, May 18, 1861.)

XVI.—*Infantile Erysipelas.* By J. Lewis Smith, M.D., of New York.

This affection being rare among infants, a full knowledge can only be acquired by the aggregate experience of practitioners. In forming the tables, Dr. Smith rejects all attacks of umbilical erysipelas. He reports in detail 36 cases, of which 19 died; 24 were under six months, 9 from six to twelve months, and only 3 above one year.

Of 49 cases, the point of commencement was 13 times in the vulva; 16 in the arm from vaccination; 6, the leg; 2, near the ear; 1, the elbow; 1, the shoulder; 1, the chin; 1, the nates. Of 33 cases, 14 were males, 19 females. The causes are impure air, uncleanliness, and defective alimentation. In a large proportion there is generally an exciting cause, such as vaccination. This may arise from the cut or vesicle, but the virus itself may also be in fault, as some cases undoubtedly indicate.

In very young infants the disease may be traced to the mother, who is also attacked. He relates the following remarkable case:—

About the year 1840, Dr. Folsom, of New Bedford, Massachusetts, saw a case of a man with a pain in the knee, who died suddenly with obscure symptoms in two days. Dr. Elijah Colby, at the autopsy, pricked his finger, and not feeling any inconvenience, attended a case of labor. In a few hours he was taken sick, and left the case in charge of Dr. Folsom. She died in three days with puerperal fever. The infant, in two days, was seized with erysipelas, and died in one day. Dr. Colby's finger became swollen and painful, the lymphatics of the arm inflamed, and the axillary glands suppurated. There was, however, no appearance of erysipelas. In two weeks he resumed practice, and attended fifteen obstetrical cases. All the mothers died of metro-peritonitis, and the infants of erysipelas in a week after birth. The doctor temporarily retired.

The symptoms of infantile erysipelas are restlessness, pain, want of sleep, fever, the rash, not peculiar, though sometimes vesicated. There is a strong tendency for the disease to return.

The prognosis is very unfavorable. Under six weeks death generally ensues; up to six months recovery is doubtful; above that the majority recover. It is more favorable when the limbs are affected; when it spreads slowly; when superficial.

The duration averages fifteen days in cases which recover, and nearly ten in those that die. Death generally occurs from exhaustion.

The treatment in this country seems uniformly to be with the tinc. ferri muriat., beef-tea, and wine-whey. Across the Atlantic depletion is more generally employed; hence Bouchut's aphorism, "*the erysipelas of infants is a fatal disease.*"

The largest dose was ten drops every two hours to a child twenty months old, who recovered. Quinine was occasionally given as a tonic. Complications were treated as in other cases.

Local treatment to limit the disease is rather injurious than otherwise. The usual remedies may be employed to moderate the intensity of the inflammation. —(*Amer. Med. Times*, June 22, 1861.)

XVII.—*Treatment of Hooping-cough.* By C. S. SHELTON, M.D., Springfield, Illinois.

The treatment of pertussis by the use of the extract of belladonna and sulphate of zinc, as recommended by Dr. Fuller, in the *Lancet*, has been successfully tested by Dr. Shelton in sixteen cases. In each case beneficial results speedily followed, and in the greater number the cough was cut short, in many in about ten days. The ages of the children ranged from six months to ten years. Those under three years took, at the commencement, one-sixth of a grain of belladonna and half a grain of zinc four times a day, dissolved in mucilage. Above that age, the dose was a quarter of a grain of the extract and a grain of the zinc, increasing the dose, in some to double the quantity, according as the child could bear it. The speedy modification of the symptoms rendered it unnecessary in some, while others could not bear it. An hour after taking the medicine there resulted a deep-red color of the whole surface, particularly of the face and neck, dilatation of the pupils, arterial excitement, dry, warm skin, and general excitability of the system, all passing off in from one to three hours. The paroxysms would soon be less frequent and protracted, the hoop less loud, the spasm greatly subdued, less bronchial irritation, and the stomach less irritable. No other medicines were given in conjunction with these remedies.

One child of two years, though very ill, was cured in ten days; and in a second attack, from careless exposure to the cold, a like result followed. A boy of seven years, though the disease was gradually increasing in violence, in about ten days was perfectly well.

Dr. Shelton is led to believe that these remedies "possess peculiar power in reaching the seat of the disease, and that the hooping-cough need not run its course."—(*Amer. Med. Times*, July 20, 1861.)

2.—*New Remedy for Hooping-cough.* By M. FOSTER, F.R.C.S., Huntingdon, England.

Dr. Foster has, in about fifty cases, used the *trifolium in fœno*, or common clover hay, which failed only in three or four. It cures mostly in a few days, sometimes extending to a week or two. It relieves the spasmodic character of the paroxysms, while other symptoms are met with emetics, aperients, tonics, and salines. Since using it, Dr. Foster disbelieves in "the natural course" of pertussis. The remedy answers best when it acts slightly on the bowels.

The hay should be sweet and leafy. For the infusion:—℞. Trifolii in fœno, ℥ij; Aquæ bullient, Oj. Macerate for four hours and strain. For a child of five years, give a tablespoonful three times a day. The syrup:—℞. Trifol. in fœno, ℥ijss; Sacch. cand., ℥ij; Aq. bull., Oj. Macerate in the water for an hour with gentle heat, then boil down to proper consistence. Dose, two teaspoonfuls four times a day.—(*Med. Times and Gaz.*, May 25, 1861.)

PHYSIOLOGY.

BY S. WEIR MITCHELL, M.D.,

LECTURER ON PHYSIOLOGY IN THE PHILA. MED. ASSOCIATION.

I.—*A Case of Preternatural Anus, with Contributions to the Physiology of Digestion.* By W. BRAUNE.

W. Braune has had the opportunity of examining the phenomena of digestion in a fistula of the ileum, or rather a preternatural anus, situated about twenty-four centimetres (rather more than nine inches) above the ileo-cœcal valve. The fistula was the consequence of a neglected or maltreated hernia near the umbilicus, in a woman, aged forty-nine. The communication between the upper and lower portion of the intestinal tract was completely closed. The chyme issuing from the fistulous opening after meals was, in general, rather thin, had an acid smell, and a distinctly acid reaction, while the mucous membrane of the ileum turned the red litmus-paper blue. During fasting the reaction of the chyme was neutral. The chyme contained no cholepyrrhin, but a considerable quantity of biliary acids; there was no proof of unchanged casein, while Busch, in his case of fistula of the jejunum, distinctly noticed it; sugar was absent; uric acid was not found. The aqueous extract of the chyme exercised no influence on coagulated albumen. The excretions from the anus consisted only of mucus and epithelium, occurring about once in four weeks, and emitting a very fetid smell. With regard to the time elapsed between the ingestion of food and the appearance of the remains in the chyme, the first portion of meat was recognized after three hours, and no more traces were found after six hours from the meal; the skins of grapes, when taken fasting, were passed after three hours and five minutes; when taken with other food, after three hours and three-quarters. In Busch's case, where the fistula was in the commencement of the jejunum, the first portions of meat appeared from between twenty-two to thirty minutes after the commencement of the eating; the passage from the jejunum to the lower portion of the ileum appears therefore to require between two hours and three-quarters and five hours and a half. The *temperature* in the intestine was always rather higher than in the axilla. After meals there was constantly a perceptible increase of temperature as well in the intestine as also in the axilla, the greatest increase amounting to 0·90 F.—(*Virchow's Archiv*, vol. xix. p. 470, 1860; *The British and Foreign Medico-Chirurgical Review*, July, 1861.)

II.—*On the Influence of Change of Atmospheric Pressure on the Human Organism.* By R. VON VIVENOT, Jun.

Vivenot has examined the phenomena observable in man when exposed to sudden alterations of atmospheric pressure. Rapid and considerable *diminution* of pressure—as experienced in the ascent in an air-balloon to the height of about 18,000 feet above the sea, or by the climbing of mountains of a similar elevation, connected with a reduction of pressure to one-half of what we are generally exposed to—is found to cause: 1. Increased evaporation from the lungs and surface of the body. 2. Increased oxidation, in consequence of the loss of warmth occasioned by the augmented evaporation. 3. Increased frequency of respiration and pulsation, the former being induced as well by the smaller amount of oxygen contained in a certain volume of air, as also by the greater amount required in the formation of heat. 4. Congestion of blood toward the peripheric parts, and in consequence dilatation and even rupture of the blood-vessels. 5. Diminished approximation of the corresponding portions of joints. 6. Diminished secretion of urine, as an effect of the increased evaporation. The observations on *increased* atmospheric pressure have been made in Tabarié's air-compressing apparatus, as it is used for therapeutic purposes at Nice, Montpellier, and other places, under the name "*bain d'air comprimé.*" The author's inferences are based on researches made at Nice on himself and four other male individuals. For the description of the apparatus we refer to the essay itself. The experiments are made on eight successive days, between the hours of twelve at noon and two P.M., before the principal meal, the mean temperature being 11° Cent., (51·8° Fah.,) the atmospheric pressure in the apparatus amounting to 1½ atmospheres, (925·04 millimetres* mercury.) The effects of the compressed air were: 1. A decided decrease in the frequency of pulsation: the greatest decrease being eighteen beats per minute, the average ten beats. 2. Diminution of the number of respiratory movements, amounting in the mean to 1·1 per minute. The influence, as well on the pulse as also on the respiration, lasted beyond the time of the experiment; it seemed to be greater where the frequency of pulse and respiratory movements were morbidly increased. 3. Diminished evaporation from the surface of the skin and lungs. 4. Increased secretion of urine. 5. Repulsion of the blood from the periphery, especially checking of congestive conditions in the periphery. The author further expresses the opinion, that the slight variations of atmospheric pressure occurring under usual circumstances, with change of weather, are of little influence on our feeling of health and strength, and that the phenomena frequently ascribed to these slight changes are due to other influences, as temperature, moisture, and winds.—(*Virchow's Archiv*, vol. xix. p. 492, 1860; *The British and Foreign Medico-Chirurgical Review.*)

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* A millimetre = 0·03937 inch, or 0·47 line.

III.—*Contribution to the Physiology of the Liver; Influence of Alkalies.*

By F. W. PAVY.

Pavy has examined the influence of injections into the jugular vein of carbonate of soda in solution, on the appearance of diabetes after section of the sympathetic nerve of the neck. He injected in other experiments solutions of carbonate of soda into the stomach and into the portal vein. The principal inferences of the author are: 1. The introduction of carbonate of soda into the circulation prevents the production of saccharine urine, after lesions of the sympathetic nerve, otherwise occasioning it. 2. Carbonate of soda, injected into the general venous system, does not prevent the urine from becoming saccharine after the destruction of life, when the circulation is kept up artificially; but injected into the portal system, so that all may pass into the liver, it has the effect of keeping the urine entirely free from sugar. 3. Carbonate of soda, injected into the portal system during life, causes a rapid disappearance of the hepatine from the liver, without any sign of the production of sugar. 4. In the disappearance of hepatine under the influence of carbonate of soda, the hepatine is not concealed, nor transformed into sugar, nor destroyed by any direct chemical power; but may be transmuted by a process analogous to catalysis, into another substance which, as yet, has escaped discovery. 5. Carbonate of soda, injected into the liver after death, does not effect a disappearance of hepatine; but even when injected in moderate quantity, holds the saccharine metamorphosis completely in check. The author further suggests that there is a close connection between the disappearance of hepatine, the production of fat, and the state of the bile.—(*Proceedings of the Royal Society*, vol. xi. p. 90, 1861; *The British and Foreign Medico-Chirurgical Review.*)

IV.—*On the Influence of the Pneumogastric and the Superior Laryngeal Nerves on the Movements of the Diaphragm.* By J. ROSENTHAL.

Rosenthal communicates to the Academy of France that he has found that irritation of the central portion of dissected superior laryngeal nerve influences the action of the diaphragm. The manner, however, in which irritation of the superior laryngeal nerve acts is different from that manifested by irritation of central end of the pneumogastric nerve below the giving off of the superior laryngeal; while moderate irritation of the pneumogastric nerve arrests the diaphragm in the state of contraction, that of the superior laryngeal arrests it in the state of relaxation; while very weak induced currents applied to the pneumogastric cause a remarkable acceleration of the movements of the diaphragm, the same applied to the superior laryngeal nerve cause retardation. Rosenthal regards the superior laryngeal nerve as an "inhibitory nerve."—(*Compt. Rend.*, vol. lii. p. 754, 1861; *The British and Foreign Medico-Chirurgical Review*, July, 1861.)

MATERIA MEDICA AND THERAPEUTICS; MEDICAL CHEMISTRY; TOXICOLOGY AND LEGAL MEDICINE.

BY EMIL FISCHER, M.D.

MATERIA MEDICA AND THERAPEUTICS.

I.—*On the Employment of Digitalis in Organic Affections of the Heart.* By M. PFAFF.

M. Pfaff recommends the following rules in the administrations of digitalis in disease of the heart: The drug should be administered, not in increasing, but in decreasing doses; and the dose should be diminished as soon as the paralyzing action on the heart and arterial system is perceived. The calmative effect produced by digitalis on the activity of the heart, when morbidly excited, is durable, and is often prolonged for five or eight weeks. The administration of the medicine, in any form whatever, ought not to be continued for more than six or eight days; and if in that time the desired results have not been obtained, recourse should be had to squills or colchicum. These two produce also a calmative action on the heart; and if, after their use, we again have recourse to digitalis, the medicinal symptoms are manifested more promptly, and continue for a greater length of time. In torpid subjects it is advisable to precede the administration of digitalis by a preparatory treatment with squills and colchicum; and in the majority of cases it is of advantage to combine the digitalis with aromatics, bitter extracts, or tonics, in order to avoid the disturbing effects on the digestive organs. With aged persons it is best to give it along with quinine; in tubercular constitutions, united with opium; in dropsical cases, with liquor potassæ, acetate of ammonia, squills, juniper, etc.; in plethoric individuals, it may be associated with cream of tartar, magnesia, sulphate of potash, and nitre; and in the anæmic, with the extract or tincture of malate of iron. By following up the use of digitalis by the administration of arsenic, the cyanotic effects of disease of the heart may often be considerably diminished.

With respect to the different preparations of digitalis, M. Pfaff prefers the infusion to the powder, which is apt to disorder the stomach. The infusion, on the other hand, is more apt to cause colic. The decoction produces the latter effect in a more marked degree, but presents more decided diuretic properties than the other preparations. The alcoholic tincture has the same action as the infusion, but in smaller doses gives rise to phenomena of cerebral congestion, vertigo, etc. The ethereal tincture produces, even more rapidly, the same effects, which, however, disappear as soon as the cardiac and vascular symptoms are developed.

M. Pfaff also recommends the external application of digitalis in cases where complications prevent its internal administration. He has used it with benefit in the form of a mixture of equal parts of chloroform and ethereal or alcoholic tincture of digitalis; ʒij of the mixture are applied by means of a compress three times a day, the compress being retained as long as a burning sensation is felt. The depressing action of the digitalis is manifested at the end of two or three days.—(*Gaz. Méd. de Paris*, June, 1861, *and Edinburgh Med. Journal*, July, 1681.)

II.—*On the Operation of Aniline upon the Animal Body.* By DR. SCHUCHARDT. (Archiv für Pathologische Anatomie und Physiologie und für Klinische Medicin, 1861.)

Dr. Schuchardt made a series of experiments to prove the effects of aniline upon animals. Aniline is an oily liquid, of powerfully basic properties, obtained by the distillation of indigo, and the name aniline is derived from the specific name of the indigo plant, *indigofera anil.* The physiological properties of aniline are but little known, but the researches of Dr. Schuchardt prove that it is a poisonous substance. The results at which he arrived are the following:—

Aniline may act injuriously on the animal organism, and in large doses may even cause death. Frogs introduced into a weak solution containing aniline, died in periods varying from a quarter of an hour to two hours and a half; and death was also caused by the introduction of aniline into the mouth or into a wound in the back. Rabbits were also poisoned by this substance, a small animal being killed by fifty drops in six hours and a quarter, and a larger one by one hundred drops in four hours. In all the animals experimented upon, violent clonic and tonic spasms ensued after the application of the aniline, and continued almost uninterruptedly until death. There was also loss of sensibility, commencing at the lower extremities, and extending to the upper; and the temperature of the body was also reduced. Wherever the aniline was applied locally, as in a wound of the back, on the stomach, on the posterior part of the tongue, or on the conjunctiva, appearances of irritation were observed, which are probably connected with the power possessed by aniline of coagulating albumen. The aniline was never detected in the urine, and it is probable that this substance is eliminated from the body rather by the organs of respiration than by the kidneys.—(*British and Foreign Med.-Chir. Rev.*, July, 1861.)

III.—*On the Physiological Action of Santonine and of the Essential Oil of the Seeds of Artemisia Contra.* By DR. EDMUND ROSE, of Berlin. (Archiv für Pathologische Anatomie und Physiologie und für Klinische Medicin, 1860.)

Santonine is an organic principle obtained from the artemisia contra, and possesses vermifuge properties; but its operation has only recently been minutely studied. Dr. Rose has taken it himself, in the dose of a gramme, (about fifteen grains,) without injury. Its taste is bitter, very disagreeable and persistent, and it is slightly diuretic, but rather confines the bowels. It produces a peculiar and indescribable narcotic effect, and causes a species of color blindness, tinging all the objects seen with a yellow hue. The essential oil of artemisia contra is poisonous. It kills rabbits in the dose of about two grammes, producing convulsions, which descend from the head to the lower extremities, followed by ascending paralysis. This oil is not vermifuge; for in medicine and medicinal doses it is absorbed in the stomach and the upper part of the small intestines, and does not reach the lumbrici, which generally exist lower down. In larger doses it is poisonous. Santonine, on the other hand, is a good vermifuge. It is innocuous, and traverses the whole of the digestive canal, and is found in large quantity in the fecal matters; for it is almost insoluble in water, and a small part only is transformed into soluble santonate of soda, after contact with the bile, and it is santonine which most rapidly destroys the worms. Santonate of soda ought not to be substituted for santonine, as has been sometimes recommended, for it possesses no superiority over the latter, and is, besides, of a more disagreeable taste, and is poisonous in large doses.—(*British and Foreign Med.-Chir. Rev.*, July, 1861.)

IV.—*On the Local Action of Savin.* By DR. EISENMANN, of Wurzburg.

The Hungarian Journal of Physiology and Medicine, 1859, No. 5, and from it the Medico-Chirurgical Monthly Papers for May, 1859, contain a communication by Dr. Moller entitled "Savin as a Popular Remedy," according to which it would appear that in Hungary a decoction of savin is in common use for the removal of polypi. The author is acquainted with the case of a peasant woman, who by means of this agent got rid of a nasal polypus; and he himself successfully employed it to destroy and remove a soft nasal polypus which he had twice in vain extracted. On account of the softness of the polypus, he had not been able to extract the root, and it had consequently always again grown rapidly. The following is the mode of using it:—

A drachm of savin-tops was boiled for five minutes, in about three or four ounces of water, and the polypus was painted frequently during the day with the filtered decoction; the fluid was also injected into the nose.

This communication reminds me of some results I have myself observed from savin. In Hecker's old Materia Medica, the following preparation is found under the name of Hecker's salve:—

An onion is roasted in the ashes; the juice is expressed, and with this juice, and a corresponding quantity of powdered savin, a sort of liniment is prepared. This liniment is recommended by Hecker in the treatment of condylomata, and in fact it removes venereal warts in a suprisingly short time. During twenty years' experience I repeatedly observed very fully developed condylomata disappear completely after three days' use of this ointment. These remarks may serve to introduce the following:—

During my stay at the fortress of Oberhaus, at Passau, I became acquainted with Bonkratz, the drummer of the battalion, who attracted my attention in consequence of a tumor he had on his neck, beneath the right ear. This tumor was circular and flat, was equal in circumference to a crown-piece, rather over than under it, and was about a quarter of an inch in thickness. It had a tolerably wide base, was hard as fibro-cartilage, and presented a bluish-red appearance. This tumor had been frequently removed with the knife, and its root extirpated by the actual cautery, but it had always grown quickly again. In other respects Bonkratz was in good health, had no traces of syphilis, and his skin was free from eruptions and ulcers. The causes of the tumor were quite unknown. I spoke to Dr. Delzer, at that time surgeon to the regiment, about the case; mentioned my observations on the efficacy of savin in the treatment of condylomata, and suggested to him to make a trial of Hecker's salve with this swelling, which resisted all other remedies. Dr. Delzer, whom I always found extremely friendly, agreed to my proposal, and promised to carry it out. However, in September, 1843, I left the fortress, and lost sight and recollection of Bonkratz. In the autumn of 1847 I met the same Bonkratz at Nurnburg, where he had been employed at the custom-house, quite unexpectedly in the street. The tumor in his neck was completely gone, and, as he said, in consequence of the use of the remedy I had recommended.

Savin, therefore, exercises a remarkably deletary influence on condylomata, polypi, and tumors, which may perhaps be regarded as polypi of the external skin; and who knows how much farther this influence may extend?—(*Virchow's Archiv*, Band xviii., 1 und 2 Heft, p. 171; *Dublin Quarterly Journ. of Med. Science*, May, 1861.)

MEDICAL CHEMISTRY.

I.—*Formation of Glucose with Chondrine.* By MM. FISCHER and BŒDECKER.

The costal cartilages of six dead bodies were at first cleared of the tendons, then washed in hydrochloric acid, and finally boiled with this acid in a concentrated state. When, after neutralization by an alkali, the liquid reduced the cuprotartric solution, the quantity of sugar produced was determined.

The authors have found by direct experiments that the chondrine employed as aliment augmented the proportion of urea and of sugar in the urine; the density of the urine was not sensibly affected, nor the quantity secreted. The urine was constantly acid. The experiments lasted six days. During three days a normal regimen was followed, of which, however, sugar and chondrine were excluded; during the three other days 500 gr. of the latter substance, in the state of compact jelly, was taken, seasoned with 6 gr., 25 of sea salt; the jelly represented 36 gr. of chondrine dried at 120°.

Under the influence of this regimen the urea increased from 32 gr. to 41; the sugar from O gr., 407 to O, 509 and 847.—(*Ann. der Chem. und Pharm.*, t. cxvii. p. 111, 1861.)

II.—*On Alcaptone, immediate Principle of a Pathological Urine.* By MM. BŒDECKER and DURR.

This substance was found in the urine of an asthmatic patient, who had previously been affected with typhus. Its presence is easily proved by the action of potassa; the urine became rapidly brown on absorbing oxygen from the air. The alcaptone, as M. Bœdecker calls it, reduces the cuprotartric liquid, but it has no effect upon the hydrate of bismuth.

In order to extract it, the urine is first precipitated by the neutral acetate of lead, then, after filtration, by the tribasic acetate, of which an excess must be avoided; the precipitate, which contains all the alcaptone, is washed in water, then decomposed by sulphuretted hydrogen. After evaporation in the water-bath it is redissolved in ether and left to crystallize; some crystals of hippuric acid are deposited, the brownish-red residue gets dry and furnishes a vitreous mass, which becomes viscid, at the air, is fusible, inflammable, and decomposes itself, giving off an offensive odor, which reminds one of the principles of bile.

The alcaptone is soluble in water and in alcohol; pure ether is without action. It contains nitrogen.

On applying heat, it reduces the nitrate of silver and of mercury, chromic acid and permanganic acid. It does not ferment.

By its behavior in regard to the cuprotartric liquid and to hydrate of bismuth, it approaches uric acid.

In the urine which contained this substance, glucose was constantly present. It always differed from diabetic urine in the fact that the proportion daily secreted did not exceed 1500 C.C., and never contained more than 1 per cent. of sugar.—(*Annal. der Chem. und Pharm.*, t. cxvii. p. 98, 1861.)

TOXICOLOGY AND LEGAL MEDICINE.

On the Detection of Arsenic. By DR. TAYLOR.

In an elaborate paper in the last volume of the *Guy's Hospital Reports*, (third series, vol. vi.,) entitled "Facts and Fallacies connected with the research for Arsenic and Antimony, with suggestions for a method of separating these poisons from organic matter," Dr. Taylor passes in review the processes of Marsh and Reinsch, giving many useful hints as to their proper performance, and pointing out the fallacies against which the analyst must be on his guard, and especially noting that fallacy which gave such notoriety to the Smethurst trial. As to Marsh's process Dr. Taylor gives the following estimate, p. 207: "It may be stated that there are two difficulties which the analyst encounters in resorting to it for the separation of arsenic from the solids or fluids of the body. First, there is no good or simple method of bringing the arsenic to a concentrated state, *i.e.* to a state fitted for testing, without producing froth; and secondly, when the quantity of arsenic in an organic liquid is so small as to render the adoption of the process necessary, it is not possible to follow the plan of the inventor, of generating the hydrogen in the whole quantity of the organic liquid."

Reinsch's Process.—The process of Reinsch is now rendered as satisfactory for the detection of antimony as of arsenic; and by comparison with the process of Marsh, it is not only more delicate, but far more convenient in its application. Marsh's process may be used simply for corroboration.

In comparing the two processes for the separation of antimony from liquids, I have found that Reinsch's method is twenty times more delicate in revealing the presence of antimony than that of Marsh, as it is usually employed.

There is this difference between the two discoverers, Marsh and Reinsch—

while the former suggested a useful application of facts already made known by others, the latter discovered for himself the simple fact upon which his process is based. Until within a recent period it was thought too, that the materials used in the process of Reinsch were far less liable to give rise to fallacious results than the materials required for the process of Marsh. The investigations, however, which were carried out by Dr. Odling and myself in the case of Isabella Banks, (the case of The Queen against Smethurst, August, 1859,) showed that there was a latent fallacy connected with the use of Reinsch's process, of the existence of which neither Reinsch nor any toxicologist of repute had up to that date the slightest suspicion. This was the discovery of arsenic in all the best and so-called purest varieties of copper, whether as foil, gauze, or wire, and in sufficient proportion to give rise, under certain conditions, to fallacious results.

Arsenic as an impurity in Copper.—It has been hitherto considered that one of the great advantages of Reinsch's process was, that while hydrochloric acid might easily be obtained pure, no question could arise about the impurity of copper. The presence of arsenic in the purer forms of this metal was, until 1859, either not suspected or wholly ignored by chemists of the highest authority. It now turns out that there is no kind of copper available for use which is free from arsenic; and some kinds of foil and wire hitherto used and still employed by analysts of repute contain arsenic united to copper as arsenide in comparatively large proportion. In fact, whether among English, or French and German writers on chemistry and toxicology, there is not one who has ever pointed out, or even suspected, that this process would lead to error by reason of the universal presence of arsenic in copper, commercial or refined, which is accessible to the chemist. All have hitherto relied upon the cleanness of the surface of the copper used, and the method of testing the acid and copper first pointed out by Reinsch. As a general rule, this is quite sufficient. There is no liability to fallacy unless the copper is used on a large scale, and there is an acid or salt present which acts upon and dissolves the impure metal. Pending its solution the atoms of arsenic combined with it as arsenide or arseniuret are set free, and may thus attach themselves to the clean surface of the undissolved copper. It is clear that if the presence of a minute quantity of arsenic in copper presents that great risk of fallacy which some chemists have recently endeavored to impress on the public mind, no one of the numerous analyses for arsenic by Reinsch's process, which have been undertaken during the last twenty years, could have been made without the inevitable discovery of arsenic. In short, if a source of fallacy, it would have led to the constant and inevitable discovery of arsenic in every solid and liquid submitted to examination. Analysts who have had much experience in the use of this process, will bear me out in the statement that, in employing samples of the same copper and acid, for one affirmative result in which arsenic is discovered there will probably be four or five negative results, in which no deposit whatever has taken place on the arsenical copper and no arsenic was detected. By boiling successive quantities of the same arsenicated copper in the same acid liquid containing arsenic, the whole of the free arsenic is finally removed; the deposits on the metal become less and less decided, they at length cease altogether, and the last portion of copper put into the liquid comes out nearly as bright as when introduced, or if at all dull on the surface, this dullness arises not from arsenic but from oxidation, as a result of long boiling, It is obvious that if the arsenic came from the copper itself and not from any extraneous source, instead of the arsenic diminishing on each introduction of the copper, it would go on increasing in proportion to the quantity of the metal employed in the analysis. The hundreds of negative results which have been obtained by experienced analysts establish the untruthfulness of the assertion that the process, as it is commonly employed, is attended with a serious risk of fallacy, even when copper containing arsenic is unknowingly used. The analysis performed by Reinsch, Gaultier de Claubry, Orfila, Christison, Maclagan, Geoghegan, Watson, Rey, Penny, and others, are as unassailable on this ground as those which have been performed by Mr. Herapath himself, even with his No. 13 commercial wire, *i.e.* assuming that the copper and acid have been boiled together and no deposit formed, before the suspected substance was added.

Is there any risk in employing copper containing arsenic for separating this substance in cases of poisoning? The answer may be anticipated. There is no risk unless the copper during the process is brought to a state of solution; and of this fact the operator is immediately informed by the disappearance of the metal, and by the liquid acquiring a deep-green color. Hence, while the negative results which the process so frequently furnishes afford an unquestionable proof that the copper may be used with safety, the operator has clear evidence when there is risk, by the solution of the copper in the acid liquid. If the copper employed is unaltered in weight and is not to any perceptible extent dissolved, it is obvious that the liquid submitted to analysis cannot have received any impregnation of arsenic from the copper employed, and if, under these circumstances, arsenic is deposited on the copper, then that poison must have been present in the liquid submitted to examination. Cold hydrochloric acid, if strong and not too freely exposed to air, produces no deposit or change in the appearance of bright copper even after forty-eight hours' immersion and exposure. Whether the copper be pure or arsenicated, there is no perceptible difference. The upper stratum of the liquid has a slight, greenish-yellow tint, arising from the oxidation and solution of a small quantity of copper. If the polished copper is immersed in an acid diluted with eight parts of water, it will be found after forty-eight hours that the whole of the liquid has a greenish color, from the formation of chloride; the copper, if arsenicated, is coated with a thick, dark-colored deposit, while if pure, it is of a reddish-brown color. The surface of the metal in either case will be found much corroded, and a number of tetrahedral crystals of sub-chloride of copper are scattered over it. I have not been able to procure crystals of arsenious acid by heating impure copper thus coated, and I have not detected any arsenic in the acid liquid. The amount of arsenicated copper dissolved is probably too small to furnish any evidence of arsenic. These results confirm Reinsch's statement, that the concentrated acid, *cœteris paribus*, exerts a less powerful action on copper than the diluted acid; they also prove that arsenicated copper should not be allowed to remain for a long time in the acid liquid. The tarnish thus formed might, unless properly tested, be mistaken for arsenic, or conceal an arsenical deposit. They prove, however, that the alloy of arsenic and copper (arsenide) is not so decomposed by cold, diluted hydrochloric acid as to set free any arsenious acid in the liquid. In short, the danger of any fallacy in the ordinary use of the process, arises from the presence of arsenic as an impurity in the acid and not from arsenic contained as impurity in the copper. But for this fact no chemist would ever have met with negative results in employing copper in the state in which it has hitherto been used.

Hydrochloric acid diluted with from six to ten parts of water has but a feeble action on copper, even after long boiling. A trace of this metal may under these circumstances be found in the liquid. If, however, the oxide of arsenic or antimony should be present in the liquid, a portion of copper is immediately dissolved and an equivalent portion of arsenic or antimony is deposited. So soon as the copper is completely coated, the solvent action is arrested.

In order to determine how far arsenicated copper is liable to undergo solution and to set free arsenic as a result of boiling in pure hydrochloric acid, diluted, the following experiment was performed: a quantity of copper foil and gauze, equivalent to 39·4 grains in weight, was boiled in a retort with a mixture of one ounce of pure hydrochloric acid and eight ounces of water. The boiling was continued for half an hour, and the distilled acid liquid was collected in a cool receiver. This amounted to twelve fluidrachms; it contained no trace of copper; and on a careful examination of the liquid by Marsh's and Reinsch's processes, there was not the slightest trace of arsenic in it. The large quantity of acid liquid left in the retort was found to contain a small quantity of copper, but there was no arsenic dissolved in it. The undissolved copper, when washed and examined by the microscope, had no metallic deposit upon it. It was unchanged in color, but presented slight marks of corrosion; a quantity of it heated in a tube gave no sublimate.

When arsenicated copper is boiled in the diluted acid for five minutes—a period within which arsenic, if present, is commonly manifested by some deposit or change of color on the surface of the metal—no copper is dissolved. The metal retains its usual polish and lustre. If a small portion of oxide of arsenic or antimony be now added to the boiling acid liquid, there is an immediate deposit on the clean copper surface, and copper in small quantity will be found dissolved in the liquid by that delicate test—ferrocyanide of potassium. It is therefore obvious that the metallic oxide (*i.e.* the poison itself) brings about the solution of the copper, but not to an extent to eliminate arsenic so as to affect the process. It has been alleged that the accidental presence of certain salts, or organic liquids not containing arsenic, would lead to a sufficient solution of the copper to give rise to a deposit of arsenic on that metal. This action has been loosely ascribed to alkaline nitrates, phosphates, sulphates, and chlorides, salts which may be occasionally met with in organic liquids. A grain of each of these salts was dissolved in two drachms of diluted hydrochloric acid, in the proportions used for the precipitation of arsenic, (1·8.) The solution was brought to the boiling point and boiled for a few minutes in contact with a slip of polished copper. No copper was dissolved in any one instance, and the metal retained its lustre. On adding a minute portion of arsenic to the liquid, the metallic copper was speedily coated, and traces of a salt of copper were now for the first time found in the liquid. When to a similar quantity of acid liquid in which copper was immersed, a fragment of chlorate of potash was added, there was an immediate solution of a portion of the metal, a fact rendered evident by the production of a green color and by the application of the usual tests for copper to the liquid.

While the presence of a sulphate, nitrate, chloride, or phosphate does not affect the process, so long as a properly diluted acid is employed for a proper time, it was found that an alkaline chlorate, even in small quantity, caused a rapid solution of the copper, and in proportion to the amount of this solvent action, a liberation of arsenic from the arsenicated copper. Owing to this chemical action of a chlorate on copper, it has been contended that Reinsch's process ought never to be employed when such a salt is present. Mr. Herapath affirms that "Reinsch's process is not applicable where nitrates or chlorates are present." With respect to the nitrates, it admits of distinct proof that they present no objection when a properly diluted acid is used; and with regard to the chlorate, the process is unobjectionable, provided pure copper be used. The operator, in using copper free from arsenic, has only to saturate the liquid with the metal, and the last portion of copper put into it will effectually remove the whole of the arsenic, as well as any antimony that may be present. It is a good method of detecting minute traces of arsenic or antimony in copper, and one free from all objection, provided the hydrochloric and the chlorate are pure. The only circumstance which would render Reinsch's process inapplicable to the separation of arsenic in the presence of a chlorate, is the use of copper containing arsenic, like the No. 13 wire, or the dial plate or foil, as it is commonly sold. It is only the analyst who has habitually and knowingly used arsenicated copper who can treat the presence of a chlorate in an organic liquid as a serious obstacle to the employment of this process.

While, however, there is no reason to believe that the use of ordinary copper is attended with any risk in the employment of Reinsch's process, merely because it contains traces of arsenic in intimate chemical union, it may be a question whether, out of deference to public opinion, a substance containing arsenic in any form or in any proportion, should be used for the detection and separation of this poison. In several medico-legal cases which have occurred since the universal existence of this impurity has been made known, the ordinary copper in gauze and foil has been employed by gentlemen who, at the time, believed they were using pure copper; they have relied for purity only on the negative mode of testing the metal suggested by Reinsch. A chemist who does this must always incur some risk; and the result may be that a jury will be induced to reject his evidence, simply because he has employed an article actually containing the poison for which he was seeking.

Whatever explanation he may give as to the non-solution of the copper, and the proportion of arsenic found being much greater than any arsenic contained in the copper which he used could possibly account for, it may always be suggested that he actually put the arsenic into the liquid. This equally applies to the use of the impure metal for the detection of antimony, as antimony is not an uncommon impurity in copper. To meet this objection it will therefore be absolutely necessary in future to seek for copper free from either arsenic or antimony.

Methods of detecting Arsenic in Copper.—There has hitherto been great difficulty in detecting small quantities of arsenic in copper; and this may account for the fact that samples of copper are sold as pure, and are pronounced to be free from arsenic, when a more careful research would have demonstrated the presence of this substance. This difficulty may be appreciated from the fact that when samples of the arsenicated copper gauze used in the Smethurst case were forwarded to five experienced analysts in England, Scotland, and Ireland, three succeeded and two failed in detecting arsenic in it. A sample of Burra-Burra copper, supplied to the Royal Mint as absolutely free from arsenic, was found (by a process to be presently explained) to contain traces of that substance.

Some Swedish copper, which had been reserved as pure by a distinguished chemist, was found on analysis to be arsenical. The detection of the arsenic depends entirely on the method pursued.

The first plan which I adopted successfully, consisted in oxidizing the copper by nitric acid, evaporating the acid liquid to dryness, and then heating the residue to procure the black oxide, and at the same time to convert the arsenic, if present, to arsenic acid. This acid was subsequently detected in the residue by digestion in water and the addition of nitrate of silver.

Another plan, proposed and employed by Dr. Odling, clearly showed the presence of arsenic in a small quantity of gauze, foil, or wire. The copper was entirely dissolved by the aid of hydrochloric acid and a weak solution of chlorate of potash. The surplus chlorine was removed by the gradual addition of small quantities of bisulphate of soda, and the sulphurous acid derived from this salt was removed by boiling—the freedom of the vapor from the acid being indicated by holding in the current starch paper saturated with iodic acid. Reinsch's process was then applied to the liquid, and if the copper under examination contained arsenic, a deposit of arsenic was obtained in the usual way on a piece of copper.

There is no chemical objection to this method; but seeing that several substances are employed in the analysis, and that a mixture of salts resulted, it appeared to me preferable to convert the copper to a soluble chloride by digesting it in pure hydrochloric acid alone, and then from the known volatility of chloride of arsenic, to separate this from the chloride of copper by distillation. For this purpose I found it necessary to expose the copper in a stratum of pure and concentrated hydrochloric acid, contained in a saucer, the metal being partly immersed in the acid and partly exposed to the air. After two or three days' exposure, according to the thickness of the metal, a brown liquid (a solution of subchloride of copper in hydrochloric acid) was obtained. In some experiments the copper was entirely dissolved; in others a portion was left. The weight of the residue, after washing and drying, deducted from the original weight employed, gave the amount of copper dissolved. The brown liquid was distilled to dryness in a flask or small retort, placed in a sand-bath, and the vapor was condensed in a flask or receiver containing a small quantity of distilled water. A perfectly clear solution of chloride of arsenic, or a mixture of hydrochloric and arsenious acids, was thus procured. When one part of this distillate was diluted with its volume of water and boiled, and a small piece of pure polished copper was introduced, the presence of arsenic was speedily indicated by the characteristic deposit on the bright metal. Another portion of the liquid was introduced into a Marsh's apparatus, or a small flask with a bent tube fixed in its neck, and, by the addition of pure zinc, arseniuretted hydrogen was easily procured from it and tested. When to a third portion a solution of chloride of gold was added, and the mixture boiled, the gold was, after a time, completely deposited. The weight of gold thus deposited supplies one method of calculating the quantity of arsenic present in the distillate.

Of the delicacy of this process for detecting arsenic there will be, I think, no doubt on the part of those who try it; and it has this important advantage over other methods, that excepting the copper, the purity of which is to be tested, and hydrochloric acid, the purity of which may be easily determined by a preliminary experiment, no chemical is used. It is equally applicable to the detection of minute traces of arsenic in the sulphate and all the salts of copper, soluble or insoluble. It is only necessary to distill them with a sufficient quantity of pure hydrochloric acid. I had in vain sought for evidence of arsenic in some sulphate of copper by the use of Marsh's process; but on distilling only ten grains of the crystals with hydrochloric acid, chloride of arsenic was obtained in the receiver, and the presence of the poison was satisfactorily proved. In the course of the Smethurst analysis, in July, 1859, Mr. Brande and Dr. Odling adopted, at my suggestion, this method of analyzing some sulphate of copper pills for arsenic, and they both expressed their satisfaction with it as a safe and delicate process.—(*Edinburgh Medical Journal*, May, 1861.)

PATHOLOGICAL ANATOMY.

BY JOHN H. PACKARD, M.D., OF PHILADELPHIA.

I.—*Hemorrhage into the Corpus Callosum.* Reported by Dr. HALDANE to the Medico-Chirurgical Society of Edinburgh.

A man about 60 years of age, of intemperate habits, fell down some steps and struck his head against a door. He was brought into the hospital in a state of concussion, from which he did not recover, but died about twenty-four hours after admission. On post-mortem examination a scalp wound, extending down to the bone, was found behind the right ear. There was no fracture of the cranial bones. When the brain was removed, a few drops of blood were found lying on the dura mater which lines the middle fossa of the skull on the right side. On slicing the brain, two or three small hemorrhagic extravasations, about the size of pepper-corns, were found in the substance of the corpus callosum. There was a small superficial clot in the left corpus striatum, and a similar lesion was found in each optic thalamus. Dr. Haldane remarked that hemorrhage into the corpus callosum was, as an idiopathic lesion, almost if not quite unknown; while, even as the result of injury, it was very rare, except in cases where there was extensive disorganization of the brain. In the present case the different hemorrhagic extravasations had no doubt been the result of injury, but they were extremely limited in extent; and it was certainly remarkable that a comparatively non-vascular part, like the corpus callosum, should be one of the seats of the lesion. The material lesions of the brain did not seem to be sufficient to account for the fatal result; in fact, as indicated by the symptoms observed during life, the individual died from concussion, having never recovered from the shock of the fall. — (*Dublin Medical Press*, May 15, 1861.)

II.—*Fibro-nucleated Tumor of the Brain.* Reported by Dr. Sands to the New York Pathological Society.

A barkeeper, aged 37, who had been in his usual health on retiring for the night, was found at five o'clock in the morning trying to tear off his night-shirt, and saying that he was poisoned. When seen by Dr. Sands he was dying; perfectly insensible, his respiration nearly extinct, his pulse 120, his pupils widely dilated. At the autopsy, besides slight abnormities of the heart and kidneys, easily accounted for by the intemperate habits of the deceased, there were some interesting lesions observed in the brain. The tuber annulare was increased in breadth by the presence within it of an apoplectic clot, to which death was probably owing. "The calvarium was removed in the usual manner; but when the dura mater was cut through on the left side by a scalpel, it was noticed to pass through a soft substance which was not brain matter. Care was then taken to see what was the trouble, when a tumor was discovered, developed from the arachnoid surface of the dura mater. This tumor was hemispherical in its shape, its flattened surface being its point of attachment, the convex surface crowding upon the surface of the hemisphere without showing any signs of inflammation in the vicinity. The greatest breadth of the tumor was about an inch and a half; its surface was finely lobular, and presented a very vascular appearance." Examined with the microscope the tumor was found to contain "a very appreciable amount of connective tissue, disposed in bands, running in various directions, many of them having a concentric direction inclosing circular spaces. These spaces appeared to be filled partly with nuclei and partly with cells." The tumor was thought by Dr. Sands to be "one of a very rare form, to which Mr. Bennett, the Edinburgh physician, has given the name of fibro-nucleated—a name adopted by Mr. Paget—and in his opinion the tumor is closely allied to those known as fibro-recurrent. The nuclei abound considerably above the cells; they are oval, and contain either one or two nuclei. Both the nuclei and nucleoli are very minute, the average long diameter of the former being $\frac{1}{3000}$ of an inch. The cells are exceedingly slender, and correspond in appearance with those found in the fibro-recurrent tumor. Notwithstanding the tumor seems to have existed a considerable length of time, there were, according to the account of one of his friends, no brain symptoms at any time present, excepting the occasional attacks of delirium tremens."

Several other cases were mentioned in illustration of the fact that tumors and abscesses of the brain sometimes are, and sometimes are not, attended by symptoms recognizable during life.—(*Amer. Med. Times*, June 22, 1861.)

III.—*Obscure Cases of Cancer of the Œsophagus.* By Dr. Wilks.

When this disease causes stricture of the tube, and consequently dysphagia, its diagnosis is usually clear; but sometimes the difficulty of swallowing is masked by the loss of appetite and the rapidly-increasing exhaustion of the patient, and such cases may be extremely obscure. Dr. Wilks has several times seen the true nature of the lesion detected only upon post-mortem examinations. The two following cases were observed by him at Guy's Hospital:—

Case 1.—Cancer of the œsophagus pressing on the pulmonary artery, and simulating aneurism.—"William N., aged 30, a carter, was admitted on June 2, 1860. He had felt unwell for several months, but scarcely knew what ailed him. He made few complaints on admission, stating merely that he had a pain in his back, and was too unwell to work. On carefully examining his chest, a distinct prolonged bruit was heard with the systole of the heart over midsternum. The position was remarkable, as well as the sound, and suggested, among other conditions, an aneurism of the aorta. He was then asked if he had any difficulty in swallowing, and said that he had, although he never volunteered the statement, and even then did not lay much stress on the symptom, his only complaint being pain in the back, or rather in the neck, dysphagia never being alluded to. This bruit, which was prolonged over both the systole and diastole, but distinct from both, when taken in connection with the difficulty of swallowing, was supposed to indicate an aneurism. Thus he continued for some time, eating little, but never complaining of the effort to eat. He had much pain in the course of the cervical nerves on the right side. He subsequently became much worse, by implication of the right lung, and went home to die. Dr. Wilks hearing of his death shortly afterward, went to his residence to make the post-mortem examination. Both lungs were in the early stage of hepatization. In the middle part of the œsophagus there was a mass of cancer involving the lung on each side; the disease was much more extensive than usual, not only affecting the walls of the tube, but projecting in the form of a tolerably hard mass, the size of a small egg. This pressed on the right side of the heart, obstructing apparently both the tricuspid and pulmonary orifices; the latter especially was considerably compressed by the disease. The great difficulties of an examination in private precluded a very accurate observation of the relation of the parts; sufficient, however, was seen to afford an explanation of the bruit, and so of the mistaken diagnosis.

"*Case* 2.—Cancer of the œsophagus opening into the aorta.—Margaret H., aged 60, admitted April 17. On admission she appeared ill, but made no special complaint. She had worked hard, and appeared to be rather worn out than suffering from any positive disease. About a fortnight after admission she spat up a little blood, and this led to a further examination of the chest, but nothing could be discovered. Two days before death she spat up a little more blood, and at the time appeared very low. On the following day she again spat up some blood, and died.

"*Autopsy.*—The body was extremely blanched. There was extensive carcinoma of the middle part of the œsophagus, circumscribed above, but eating its way through the walls, and involving the lung on the left side. At each end the canal was somewhat constricted, but the diseased part formed a sacculus full of *débris* and coagulum. The cancer was seen as a white deposit, and outside was the hypertrophied muscular tissue. The walls were eaten away on the left side, so that on removing the left lung the diseased œsophagus was opened. At this part also it opened into the aorta by a hole of considerable size, having apparently proceeded along the bronchial artery and eaten off its origin. The inner coat of the aorta was detached from a softening process, and could be stripped off for a considerable distance from the spot. The adjacent lung was consolidated and softening, and in one part a sloughing cavity. Chronic pneumonia at the apex. The left ventricle closely contracted, as in hemorrhage. The stomach and duodenum were quite full of clot. There was a large coagulum modeled to the stomach, and serum above it. The intestine below contained blood."—(*Med. Times and Gazette*, June 15, 1861.)

IV.—*Malformation of the Heart, with Stricture of Pulmonary Artery.*

A boy, aged 7, was admitted into the Children's Hospital in Paris, suffering from cyanosis. He was pigeon-breasted, and his fingers and toes were clubbed. His pulse was small and irregular—90 to 100 in the minute; there was a distinct bruit de souffle in the carotids. His respiration was rapid, and he had two or three times daily an attack of extreme dyspnœa, with hard cough. His skin was cooler than natural, and he had frequent and severe headaches.

All his symptoms were gradually aggravated; he became very weak; his senses were dulled, his appetite failed, and diarrhœa came on. The immediate cause of his death was an attack of measles, the cough connected with which proved fatal on the eighth day.

At the autopsy, twenty-six hours after death, there was observed very little cadaveric rigidity. The skin was bluish, especially that of the extremities, lips, and nostrils; the lower limbs were œdematous, and all the veins were gorged with thick, dark blood.

"The veins of the meninges of the brain, the vertebral arteries, the internal carotids, were distended with blood of a violet color. The brain itself was firm, and, on cutting it by slices, the white substance was found studded with innumerable red points.

"The lungs were healthy, but small and collapsed. The thymus gland was very large. I do not remember having seen it so large, even in an infant born before time. The pericardium contained from an ounce and a half to two ounces of a yellow-colored serosity.

"*Heart.*—Walls thick, filled with black blood and fibrinous clots, as well as the origin of the large vessels. Having been removed and carefully measured, it yielded the following dimensions:—

From the apex to the base of the heart	2·44	inches.
Transverse diameter	2·08	"
Circumference of ventricular portion at widest part	29·92	"
From the uppermost part of the ventricle to the centre of the base anteriorly	2·52	"
Ditto, posteriorly	2·12	"
Distance in a straight line between the right and left extremities	1·97	"

"There was no median furrow either anteriorly or posteriorly, nor was there any sloping of the upper part of the heart. There was found no interventricular septum. The thickness of the ventricular wall was considerable; the columnæ carneæ were very numerous and powerful.

"The pulmonary artery arose from the right extremity of the ventricle, with which it communicated by a narrow opening; the sigmoid valves presented nothing worthy of notice. The calibre of the artery was, however, less than usual. The aorta was dilated. It arose from the centre of the single ventricle, between the right auricle, which was much dilated, and the left auricle, which was rather contracted. The right auriculo-ventricular opening was larger than usual, but its valves presented neither ossification nor hardness. The arrangement of the venæ cavæ, and of the pulmonary vein, presented nothing worthy of note. The foramen of Botal was obliterated, as well as the ductus arteriosus."

In connection with this case the opinion is expressed that cyanosis is the result simply of a mixture of venous and arterial blood, and that it cannot be caused by any interference, temporary or permanent, with either circulatory system.—(*Boston Medical and Surgical Journal*, June 6, 1861; from *British-American Journal.*)

[The opinion above quoted is not in accordance, we think, with that of most pathologists in the United States. See a paper by Dr. Moreton Stillé, of Philadelphia, published in the *American Journal of the Med. Sciences* for July, 1844; also a very interesting case by Dr. J. F. Meigs, in the Proceedings of the Pathological Society of Philadelphia, in the same journal for October, 1860.—P.]

V.—*Serous Cysts of the Breast.* By Drs. H. LENOX HODGE and J. J. WOODWARD.

Dr. Hodge presented, at a meeting of the Pathological Society of Philadelphia, a specimen, of which he gave the following history: "This breast was removed by Dr. Norris from a lady about thirty-five years of age. She first noticed a tumor in her right breast some seven years ago. It did not appear to increase much in size until last fall. It then began to enlarge, and at the time of the operation presented the appearance of an irregular tumor about two inches in length and breadth. Both breasts were small; the lady had been married for four years, but had never been pregnant. The whole gland was removed, as other cysts were probably scattered throughout it. During the operation the largest cyst was opened. It contained an ounce or two of thin serous fluid. There were found to be some ten cysts, all apparently situated in the midst of the tissue of the gland. They varied much in size, the smallest being about as large as the little beads of children's toys. They were provided with a distinct membrane, and could be readily turned out entire from their bed of fibrous tissue. The contents of most of them consisted of a light-colored, thin serum, but in a few the fluid was of a deeper color, and much more glutinous."

Dr. Woodward, reporting on an examination made by him of a section of the growth, spoke of the rarity of simple cysts of the mammary gland; those connected with fibrous growths or with cancer being much more common. Their anatomy, as studied by him, was as follows: "Imbedded in the morsel of gland tissue, was what at first appeared to be a single cyst, but which more exact observation showed to be three cysts, the largest about the size of a small cherry, and the smallest that of a pea. They were in the closest juxtaposition, and only separated by the thinnest septa.

"On puncturing the largest of these cysts, a *clear, yellowish fluid* escaped, which became slightly turbid on boiling, showing the presence of a *very small* quantity of albumen. Repeated examinations showed no forms in this liquid, except a few minute oil globules. The *walls* of this cyst were vascular, and composed chiefly of well-developed white fibrous tissue, in which were imbedded a considerable number of more or less atrophied fat-cells, in which the *nucleus* and a number of drops of diverse size, composed of high-colored fat, could be distinguished readily.

"*The fluid of the second cyst* was more viscid, coagulated more abundantly, and therefore contained more albumen than the first. It also contained large numbers of large, pale cells, with delicate contours and dimly granular contents, $\frac{1}{150}$ to $\frac{1}{800}$ of an inch in diameter, and each containing a clear nucleus of from $\frac{1}{3300}$ to $\frac{1}{2500}$ of an inch in diameter. Some of these cells were partly destroyed, and the nucleus set free, with or without a portion of the contents adhering to it. They were sometimes adherent by their edges, and were evidently derived from the *distinct pavement-epithelium* with which the cyst was lined. This consisted of tolerably regular hexagonal cells, rather smaller and more granular than the bloated ones floating in the fluid, viz: $\frac{1}{1200}$ to $\frac{1}{1000}$ of an inch in diameter, with nuclei $\frac{1}{5000}$ to $\frac{1}{3000}$ of an inch. The epithelium reposed on a fibrous layer, constituting the wall of the cyst, and like that of the first, vascular, and containing atrophying fat-cells. The third cyst was not examined microscopically. The tissue of the mammary gland was, in every respect, perfectly normal, so far as examined; the gland-vesicles presenting the usual characteristics. Groups of gland-vesicles, with the accompanying milk ducts, also perfectly healthy, were imbedded in the outer layers of the walls of the cyst.

"With regard to the origin of mammary cysts in general," Dr. W. thought "any exclusive doctrine must inevitably fall to the ground in the presence of individual cases. Mammary cysts may undoubtedly arise by the distention of one or more of the ultimate gland-lobules; perhaps even a lactiferous duct may dilate into a cyst in consequence of obstruction. But besides these methods, by which the gland itself might contribute to cyst-formation, cysts may arise in the areolar tissue connecting the lobules together, by a dilatation of one or more of the areolæ. Rokitansky's idea, that cysts are special hetorologous products, which begin as microscopic nuclei and dilate into cysts, had not met with general credence.

"Besides the theories of cyst-development with which he was familiar, one had suggested itself to him which he considered worthy of mention, and that was the possibility of the formation of cysts, by a process of *vacuolation*, in an intercellular matrix, similar to that by which the areolæ of areolar tissue, the intercellular passages in leaves, and perhaps all the closed cavities of the body, are developed.

"He had seen in the villi of the chorion, in a case of so-called 'hydatid mole,' microscopic cysts which appeared to be merely cavities formed by the solution of the jelly-like intercellular tissue, pushing the cells aside, and limited apparently by no distinct wall other than the substance in which they were excavated.

"In the mammary cysts above described, he believed the presence of the atrophying fat-cells in the walls was sufficient to show that the tissue of the cyst-wall was not of new formation, but represented the normal connective tissue of the gland, pushed aside, and distended by the accumulation of the liquid. The cyst described as lined by the epithelium he was disposed to regard as having originated in the dilatation of one or more of the gland-lobules—the epithelium being furnished by the overgrowth of the secreting cells of the lobule. The first cyst, which was larger, might represent one of similar origin in which the epithelium had perished; or perhaps it had originated in the connective tissue between the lobules, and not in these themselves."—(*Proceedings of the Pathological Society of Philadelphia,* in the *Am. Journal of the Med. Sciences,* April, 1861.)

VI.—*Congenital Absence of the Gall-bladder.* Reported by DR. ALEXANDER R. SIMPSON to the Edinburgh Medico-Chirurgical Society.

A child about six weeks old died, having been affected with what seemed to be sclerema of the face, arms, and legs; there was no albuminuria. "On making a post-mortem examination, the skin was found to be intensely indurated in patches all over the legs, hips, arms, and cheeks; and when incisions were made into these parts, there flowed out a pale, faintly straw-colored fluid, which, on standing, presented a fibrinous coagulum. A small orifice yielding pus was noticed on the middle of the back, opposite the spine of the ninth dorsal vertebra, which was found, on passing a probe through it, to communicate with a large cavity underneath the skin, of a lozenge shape, and extending in a longitudinal direction from a point opposite the spine of the fifth dorsal vertebra above, to another opposite the fourth lumbar vertebra below, and laterally between the levels of the angles of the ribs. In this extended space the subcutaneous cellular tissue was all destroyed, only some fibrous bands, containing vessels and nerves, still connecting the skin with the aponeurosis of the back. The thoracic organs were perfectly healthy and natural; the lungs everywhere fully distended and filled with air. The abdomen contained about a teacupful of yellow serum, intermingled with fibrinous flocculi. The intestines were injected on the surface, of a pale roseate or pink color, and matted together at parts with fibrinous deposits. These fibrinous exudations were also seen on the surface of the pelvic organs, as well as of the liver and spleen. The spleen and kidneys were healthy. No albumen could be detected in the few drops of water present in the bladder. The gall-bladder being 'conspicuous by its absence' from the lower surface of the liver, that organ was carefully removed, along with the spleen, stomach, duodenum, and diaphragm. It was found to be almost incased by a thick, yellowish layer of fibrin, by means of which it was loosely bound to the diaphragm. As members of the Society could observe, there was no trace of the existence of a gall-bladder on the lower surface of the liver, nor was there any depression corresponding to its usual site. The left lobe of the liver was nearly of equal size with the right; and although on the latter there was a faint attempt at the formation of a lobulus quadratus, there was no lobulus Spigelii or lobulus caudatus whatever. The right and left lobes were united by a thick pons hepatis over the corner of the ductus venosus, so that the latter appeared to penetrate the substance of the liver. On laying open the duodenum, the orifice of the bile-duct was at once seen in its ordinary situation, and a single drop of pale bile could be expressed from it. On tracing this duct to the liver, it was found to pass up undivided into the horizontal fissure, where it broke up at once into the hepatic tissue of the right and left lobes." — (*Dublin Medical Press*, June 5, 1861; from *Edinburgh Medical Journal.*)

VII.—*Complete Transposition of all the Thoracic and Abdominal Viscera.*

By EDWARD PARKER YOUNG, Esq., M.R.C.S.

A lady, aged eighty-five, who had, previously to her death, (with the exception of a slight cold,) enjoyed good health, was found dead in her room. A post-mortem examination being made, "on opening the thorax and abdomen, a complete transposition of all the organs presented itself. The heart lay with its base toward the left side of the spinal column, the apex pointing toward the right side and reaching to the lower border of the fourth rib under the right mamma. The venæ cavæ were situated on the left side, passing into the pulmonary cavity of the heart, which was also on the left side; the aorta and systemic ventricle to the right; so that not only was the heart reversed in position, but also in formation. The left phrenic vein was lying on the superior vena cava; the right innominata was seen passing over the aorta to the left, and emptying itself into the superior vena cava. The lungs were healthy, but old pleuritic adhesions existed on both right and left sides, especially the former. The larger lobe of the liver was in close proximity to the left ribs, the smaller lobe extending only slightly to the right of the sternum. The spleen was situated on the right side, just beneath the heart; œsophagus lying to the right of the aorta. The stomach was situated on the right side, the cardiac extremity touching the ribs, and the pyloric end extending to the left side of the mesial line; the sigmoid flexure of the colon was on the right side. The heart and its valves were healthy. The head was examined. On removing the calvaria, the veins over the surface of the brain were seen to be highly congested, and coagulated lymph was found beneath the arachnoid; the brain-substance was firm; the puncta vasculosa were more numerous and visible than usual; the lateral ventricles contained a small quantity of serum, and there was œdema of the choroid plexus, giving them the appearance of a small bunch of white currants. About two ounces of fluid were found at the base of the brain. No clot could be discovered, though a minute inspection was made."—(*Lancet*, June 29, 1861.)

Bi-Monthly Periscope.

STATISTICS OF INSANITY.

1. FRANCE.

M. LEGOYT, who is at the head of the French Bureau of General Statistics, published, a few months ago, a volume of statistics relative to establishments for the insane in France. The following analysis of this work, from the pen of M. Brierre de Boismont, presents a comprehensive summary of the lunacy statistics of France, and is extracted from the last number of the *Annales d'Hygiène Publique.* We have omitted that portion of M. Boismont's analysis which refers to expenditure and deficiencies in asylum accommodation:—

Notwithstanding the efforts made by the French administration to obtain the most complete information respecting the insane under treatment, exact data are still wanting. Idiots and cretins were not distinguished in the returns until the year 1853; and there is an excess of at least 300 per annum in the figures indicative of the total number of insane, in consequence of duplicate returns. Both these sources of error will, in future, be removed.

On the 31st December, 1853, the number of lunatic establishments amounted to 111. Of these 65 were public and 46 private. One of the public asylums belongs to the State, (Charenton,) 37 to the departments, 1 to the communes, and 26 are ancient religious houses or foundations, or divisions of a civil hospital, (*hospices ou quartiers d'hospices.*) Among these 111 establishments, 11 are devoted specially to males, 17 to females, and 83 receive both sexes. Twenty-five departments have still no establishments specially set apart for the insane.

In 1835 the number of insane under treatment was ascertained for the first time. Since this period, the figures have increased year by year with one exception, in 1850, during which year a decrease occurred in consequence of the mortality from cholera in 1849. The number of insane in the different asylums on the 1st of January in each year from 1835 to 1854, inclusive, was as follows:—

1835	10·539	1842	15·280	1849	20·231
1836	11·091	1843	15·796	1850	20·061
1837	11·429	1844	16·255	1851	21·253
1838	11·892	1845	17·089	1852	22·495
1839	12·577	1846	18·013	1853	23·795
1840	13·283	1847	19·023	1854	24·524
1841	13.887	1848	19·570		

According to this table, it would appear that the population of asylums, from the 1st January, 1835, to the 1st January, 1854, has more than doubled. It has increased in nineteen years 13,985, that is, about 1·33 per cent.

From 1842 to 1854 the number of male lunatics was 9314; of female, 10,177. At the first glance we might be tempted to conclude from this difference that women had a peculiar predisposition to insanity; but as the females under treatment in asylums are more numerous than the men, the excess is dependent upon the sojourn of the latter being less than that of the former, and upon the mortality being greater among males than females.

The 23,795 insane existing in the asylums on the 1st January, 1853, were thus distributed: in the asylums of the State, the departments, and the communes, 10,839; in the *quartiers des hospices*, 7233; in private asylums, 5733. This gives for the first, 45·55 per cent.; for the second, 30·36; and for the last, 24·09.

On investigating the relation of the number of insane under treatment to the total population of France, at five quinquennial periods, the following results are obtained:—

1836 . .	33,540,910	population,	11,091	insane;	1	in every	3,024	individuals.
1841 . .	34,240,178	"	13,887	"	1	"	2,465	"
1846 . .	35,400,486	"	18,013	"	1	"	1,965	"
1851 . .	36,783,170	"	21,353	"	1	"	1,676	"

From these figures we ascertain that, in relation to population, the number of insane under treatment has augmented considerably; for while the increase of the population from 1836 to 1851 has been 6·68 per cent., the increase of the insane has been 92·52 per cent., or nearly fourteen times as much.

But the number of insane under treatment in asylums is not an exact representation of the real number which exists; there are, indeed, many more of these unfortunates than are to be found under treatment. During the enumeration of the population in 1851, it was ascertained that 24,433 individuals deprived of reason were living in private dwelling-houses; and if this number be added to the population of the asylums in that year, we obtain a total of 44,970 insane, that is, 1·25 in every 1000 inhabitants, or 1 in 796. When the last census was taken in England, it was found that one-half of the demented individuals in that country were deprived also of the aid that they required, and contributed to augment the contingent of mental alienation. It is to be remarked that the departments (25 in number) which contain the greatest amount of insane in private dwellings are those in which no asylums exist.

From 1842 to 1853, with the exception of 1849, (the cholera year,) there was an excess of admissions into the asylums, as compared with the united discharges and deaths, the excess amounting to an annual mean of 766. If this proportion of admissions continue, it will be requisite every year to provide new asylums capable of accommodating the mean excess named, or to enlarge to the requisite extent the asylums already existing. The actual number of individuals received into establishments devoted to the insane, during the period named, was 94,169; 52,871 were dismissed, and 32,099 died. These figures give the annual mean of 7847 admissions to 4406 discharges and 2675 deaths; or 11 admissions to 10 discharges and deaths.

Of 1000 admissions, 533 were males, and 467 females; of 1000 discharges, before or after cure, 535 were males, and 465 females; and of 1000 deaths, 541 were males, and 459 females: consequently, the admissions being equal, there die in lunatic asylums many more men then women; and, on the other hand, the sojourn of the latter is notably longer than that of the men. This is, as has already been said, the explanation of the numerical predominance of the female sex in the actual population of asylums.

The mean annual number of admissions, discharges, and deaths, in each of the different classes of asylums from 1844–52 inclusive, was as follows: (1) In asylums appertaining to the State, the departments, or the communes, 5717, (admissions, 3138; discharges, 1511; deaths, 1068.) (2) In hospital establishments, 6049, (admissions, 3066; discharges, 1937; deaths, 1046.) (3) In *maisons de santé*, 3274, (admissions, 1752; discharges, 956; deaths, 566.)

The continuous increase witnessed in the number of insane under treatment is equally remarked in the number of annual admissions: thus the figure which in 1835 was 3947, arose in 1853 to 9081. During this period of nineteen years the total number of admissions was 128,542. In 1852 the total number of admissions was greatest; if it be compared with 1835, it will be found that the admissions have nearly trebled in eighteen years.

Without prejudging the question of the influence upon this increase of the number of asylums, of their enlargement, of the ameliorations which they have undergone, or of the action of civilization upon the development of insanity, M. Legoyt presents some facts which appear to him not without interest in the solution of the problem.

He observes that, if we divide the nineteen years comprised between 1835 and 1853 into four periods of from three to five years each, we shall find that the mean number of annual admissions has been as follows:—

For the 1st period	(1835–1838)	. . . .	4378
" 2d "	(1839–1843)	. . . .	6061
" 3d "	(1844–1848)	. . . .	7510
" 4th "	(1849–1853)	. . . .	8635

The mean increase from period to period, as deduced from these figures, is as follows:—

From the 1st to the 2d period	38·44 per cent.,	or	9·61	per cent. per annum.
" 2d " 3d "	23·91 "		4·78	" "
" 3d " 4th "	14·97 "		2·99	" "

From this table it would appear that since 1835 the increase of admissions gradually diminishes, in such a manner that the time may be foreseen when, all things being equal, the annual number of admissions will become stationary. It may also be remarked that if civilization, in raising the level of general comfort, has a tendency in divers ways to excite suffering, it neutralizes by degrees the deadly consequences of misery upon the public health. The increasing number of admissions can be explained by considerations every way foreign from physiological reasons: the creation of new asylums, the amelioration of the internal *régime* of these establishments, the extension of moral treatment, the reputation of physicians, the diminution of the prejudices respecting insanity, the moderate charges of the establishments, the rapidity of communications, and the gratuitous charge of indigent lunatics! It must also be mentioned, that lately abuses have affected the admissions, in consequence of the municipal authorities and even families imposing upon the departments, under the pretext of mental derangement, the charge of a great number of paupers. We shall not discuss these points, but confine ourselves to the remark that everywhere where the human brain is without cessation kept in action, there we are sure to see the number of insane predominate: it is thus that in France, in England, in the United States, where the physiological causes are excessively multiplied, the number of insane is considerable, while in Italy and in Spain the proportion is much less: it is also small in Turkey and in Asia. As to the predominance of moral causes above physical, we consider it incontestable; but it is necessary to know that the cause may be hid with infinite care, and that it is not in mere passing relations we shall obtain such avowals as these: "I have failed in my duties to my spouse;" "I have committed perjury;" "I have seduced the sister of an intimate friend, and he has perished before my eyes," etc., etc. Even M. Legoyt admits that there are thousands of fools who are not treated as such, and I would add that many are carefully hidden. Lastly, the alliances between relatives, and between insane individuals, tend without ceasing to propagate the malady. M. Legoyt says that it has been demonstrated that, during the great social crisis of 1848, there was a diminution in the number of admissions. We answer that many of these unhappy individuals fell victims to their exaltation; others fled the country; and the prisons received a large number. It has been a matter of observation, during many years, that a notable quantity of victims to political crises have entered into lunatic establishments. Moreover, it would be necessary to count those who, conceived under the influence of great disturbances, subsequently became insane.

On comparing the annual admissions with the population, we wrote that, during this period of 12 years, there has been in the department of the Seine 1 admission in every 516 inhabitants, while the proportion for the whole of France has been 1 in 4144. This result is explained by the exceptional state of the City of Paris, which obliges the authorities to sequestrate every individual deprived of reason; by the just celebrity of many establishments for the insane; and by the facilities afforded to families for having their insane treated there in absolute secrecy.

The relation of the sexes ought to be examined with care. It would appear from M. Legoyt's documents, that the admissions of men have exceeded those of women in a proportion which averages more than 14 per cent. Now, it is necessary not to lose sight of the fact that there are more women than men in the total population; hence there is a certain degree of probability that man is more predisposed to insanity than woman. According to the enumeration of 1851, and the annual mean of admissions during the quinquennial period 1849–53, it would appear that, for the whole of France, there were 3864 individuals of the male sex to every male admission, and 4473 of the female sex for every female admission.

The admission into an asylum may be carried into effect either by the families of lunatics, or by the administration, which intervenes officially. Of the 9081 patients cured in all the establishments in 1853, 2609 were placed under charge by their friends, and 6472 by the administration: thus more than two-thirds of the admissions were exacted for the public security. In the Parisian asylums, the proportion of cases sent by the administration is nearly 80 per cent.

In respect of age, from the fiftieth to the sixtieth year females are attacked more frequently than males; in 1000 cases of each sex, the number of instances within the period named being 134 males and 167 females. This result appears to indicate the influence of the critical time. As to the mean age of admission, it is 40 years and 5 months. One of the most remarkable facts made manifest by the returns respecting the civil condition, is the large number of unmarried people among lunatics in asylums; the percentage, of both sexes combined, upon the total number of insane under charge, being 61·80; while in the population at large, above the age of fifteen, the unmarried form only 36·74 per cent. This apparent predisposition to insanity among the unmarried has been attributed to the absence of those joys and cares which belong to a family, and to the terrible trials of adversity suffered alone. Without denying these reasons, M. Legoyt, however, thinks that it is necessary also to take into consideration the isolated state of the unmarried lunatic, which renders it necessary that he should be promptly conducted to an asylum.

In regard to professions, M. Legoyt has shown that, in proportion to their numbers, artists, in 1853, numbered eight times more insane than proprietors and landlords; Jesuits, seven times more; ecclesiastics and physicians, five times more; professions and men of letters, four times. For these five categories of the population combined, there were 205 individuals for one lunatic under treatment; while for the entire population, 1294 inhabitants are found for one lunatic. Soldiers and sailors must be put aside altogether, because, being sent without exception, by authority, to a special establishment, there cannot be a comparison established between them and other classes of the population, of which a great number are never placed in asylums. This result confirms the opinions generally entertained, that the professions which exact continual brain-work contain a greater number of insane than others. After trades come domestics or journeymen, the manual or mechanical professions. The proportion of insane belonging to the category of domestics and of journeymen exceeds the half of the general mean: it is also in this class that the greatest number of unmarried persons is found.

The degree of instruction among the insane has been the object of examination; but as there are no data respecting the amount of instruction existing among the entire population, the results have no relative value. Considering, however, the statistics in a general point of view, it is evident that that portion of the population of which the instruction is superior to that which has rudimentary instruction merely, furnishes a considerable contingent to the number of insane treated, since it forms nearly a twelfth. This proportion is nearly equal to that of the liberal professions.

Of 2883 lunatics, in 1853, hereditary predisposition is stated to have existed in 1410 men and 1470 women. Of 1000 lunatics, the cause of insanity was said to be physical in 572, and moral in 428. We have already remarked upon the necessity of living in intimacy with the insane in order to obtain a correct knowledge on this subject, and that the inexact information obtained in asylums, both public and private, reduces very much the value of the figures referring to heritage and other causes. There are also other objections in regard to the physical causes, because it is evident that drunkenness, bereavement, and misery have a double meaning. The man who, for example, drinks to stupefy his grief, and becomes insane, at first acts under the influence of a moral cause. Accidental suppression of menses (150) and puerperal insanity (150) in a great number of cases arise from moral impressions.

Among moral causes, the most frequent is grief arising from the loss of money: 899 cases of insanity are attributed to this cause, which is, by comparison with the total figure of moral causes, a proportion of more than 12 per cent. Afterward come religious exaltation, 1894; love, 792; violent emotions, 698; pride, 600; the loss of a loved one, 510; disappointed ambition, 495; jealousy, 442; political events, 308; excess of intellectual work, 156; *simple* imprisonment, 154; nostalgia, 48; isolation and solitude, 41; change of life, 32; association with and assiduous attention upon the insane, 16; *cellular* imprisonment, 4.

When the admissions are arranged according to seasons, it is seen that the months of summer and of autumn are those which are most charged. For both sexes, and for the female sex, the maximum of admissions takes place in July; for the male sex, in November. This difference is indicated now for the first time.

An interesting point for study is the duration of insanity at the time of reception into an asylum. Of 14,963 insane respecting whom information was furnished, in 1853, it is noted that nearly half the number had been suffering more than two years. If this return be exact—and we believe, from our own experience, that it is so—we need not be surprised at the number of insane who cumber our asylums. The English returns direct attention every year to this sad result—the result of ignorance, cupidity, and indifference.

Idiots and cretins were distinguished for the first time in the statistical returns for 1853. In that year the number of idiots is stated to have been 2654, of cretins only 45. We may remark concerning this last figure that it must be very far from being correct, for it is not in relation with the great number of existing cretins, of whom it has been estimated 3000 exist in the department of the Basses-Alpes alone.

Insanity has been considered one of the maladies which offers the greatest number of relapses. Of the 32,876 insane which form the object of this examination, the relapses amount to 1635, being a proportion of 49 in every 1000 insane. It will be acknowledged that this proportion is much less than that which occurs in many other affections, and particularly in rheumatism.

Of the 32,876 insane returns in 1853, comprehending the 23,795 in the asylums on the 1st of January in that year, and the 9081 received during the year, 12,972 came from towns, 14,536 from the country, and of 5368 the residence was unknown. Now, as the population of the towns is to that of the country as 1 to 3, it follows that the urban insane are much more numerous than the rural. This result has been attributed to the development of luxury, extreme covetousness, agitations, excesses, disorders of all kinds, industrial crises, and the miseries that they lead to. M. Legoyt, however, would attribute it to differences in administrative measures. Thus, while in towns the insane are most commonly placed in confinement as dangerous, in the country the inoffensive are left to the charge of their families; from which it follows that the towns ought to show a marked numerical superiority of insane under treatment as compared with the country. This opinion is supported by the results of the census of 1851, which show 1856 insane in 3632 cities and chief towns of *arrondissements*, and 22,577 in the communes. But it is to be observed that researches made with care by the directors of asylums demonstrate the predominance of the number of insane in towns in relation to the amount of population. There is, also, another fact which belongs to this question, that is, the excess in number of suicides occurring in towns as compared with the country, and we know the intimate relation which exists between suicide and folly.

It is difficult to appreciate rightly the results afforded by the returns of cures, because the figures vary singularly according as establishments receive patients curable or incurable, as at Bethlehem or Hanwell. In France the asylums admit indiscriminately all cases, and the proportion of chronic cases is enormous. Some asylums make their returns solely upon curable cases, while others take the total number of admissions. To obtain an exact number of cures, it would be necessary to put aside paralytics, epileptics, demented, chronic cases, idiots, cretins, *caput mortuum* of which the lot is fixed in advance, and to hold count only of recent cases of mania and monomania, the sole which have a chance. In 1853, of 4872 cases discharged, 2771 were cured and 2101 not cured. Relatively to the duration of treatment in the cases cured, 36 per cent., or more than one-third, were cured within the first three months of treatment; 25 per cent., or one-fourth, after six months' treatment; 11 per cent., or about one-tenth, in from six to nine months; 8 per cent. in from nine to twelve months. This gives, consequently, 80 per cent. of cures within the first year, and 20 per cent. only in subsequent years. The mean duration of the cures was nine months fifteen days; and the mean age of the individuals cured, thirty-seven years two months, for both sexes.

During the period of twelve years comprised between 1842 and 1853, there died 32,099 individuals in lunatic asylums, or an annual average of 2675. Of this proportion, 17,390 were men, and 14,709 women.

If the mortality be compared in public and private asylums, we obtain the following results :*—

Departmental asylums . . .	1	death in	7·90,	or	12·66	per cent.
In hospital establishments . .	1	"	6·45,	"	15·60	"
In *maisons de santé*	1	"	8·10,	"	12·35	"

Under the denomination *maisons de santé* are included establishments which receive as many as 100 insane, of whom the greatest part might also be placed in the *hospices:* be this as it may, the mortality in the *quartiers d'hospices* is the most considerable. This is to be attributed to these establishments being old constructions, badly situated in the middle of towns, and not fitted for the purpose to which they are devoted. In 1853 sixteen accidental deaths and seventeen suicides occurred. This last figure is not surprising, if we reflect on the frequency of suicidal mania. We may add even that it is providential, when we know how fixed the resolutions of the suicidal insane are. Esquirol tells us that when a lunatic wishes to kill himself, he does it in spite of precautions: this is also our conviction.

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* It is not stated how these results were obtained.—ED.

All those who have the direction of public or private asylums know the large proportion of deaths during the first month of admission. According to M. Legoyt, it reaches 10·8 per cent., or more than a tenth of the whole mortality; and he asks if, independently of the states of debility stated by some alienists as to the cause of mortality, the sudden change of regime, and the violent emotion occasioned by this hasty sequestration, may not have an unfavorable influence? We are astonished that emotion should be assigned as a cause, because for thirty years that we have been constantly in contact with the insane, and that we have observed them with particular care, we have never seen emotion occasion a grave accident. The immense majority of the insane have not a knowledge of their state; they are generally egoists; many, without doubt, regret their liberty, beg for it, and make attempts to escape; but they are rarely attacked with nostalgia, and when this does occur, the dismissal takes place nearly always immediately. The mortality of the first month, then, must be attributed to other causes, and these are those which we have noted and which our *confrères* have noted also. A great number of cases kept a long time at home are placed in asylums only when they become noisy or refuse every attention: this happens often with general paralytics; and this state corresponds always to a period of aggravation or of fatal termination. Acute and grave cases, such as acute delirium, with obstinate refusal to take food, from fear of being poisoned by enemies, terminates also unfortunately in a few days, when the aid of art is insufficient. Many insane, treated at home, from some motive or other are sent into an asylum to die there. Lastly, it frequently happens that sick are sent to asylums who are suffering from the delirium of typhoid and ataxic fevers, encephalitis, pneumonia, etc., and who expire a few hours after admission, or at the end of two or three days. This rapid enumeration, which does not comprehend every case, gives a satisfactory scientific explanation of the elevated figure of the mortality in the first month.

The seasons have upon the mortality of the insane the same influence that they have upon the mortality of the total population of France.

2. IRELAND.

The Appendix to the Report of the Commissioners of Inquiry into the State of the Lunatic Asylums, and other institutions for the custody and treatment of the insane in Ireland, contains a series of statistical tables relative to the district asylums, from which several interesting particulars may be obtained respecting the recoveries, mortality, and character of the cases received into those institutions. In our last number we gave an account of the nature and tendency of the Commissioners' Report; we now propose to lay before our readers a few of the principal results which may be gathered from the Appendix.

In our previous notice of the Report, we gave a summary of the general statistics contained in it, but we may quote here the following statement of the

Commissioners: "The Census Commissioners (1851) and the Inspectors of Lunatics in their last Report have given returns of the total number of insane in Ireland in 1851 and 1857 respectively. The returns of the inspectors are not given for the same date in the several institutions, and they contain, moreover, the number of persons simply 'epileptics' at large and in the workhouses; and as these are exclusive of the 'lunatics' and 'idiots' in those returns, they may be omitted from the total of the insane. The Census Returns give the number of insane in Ireland on the 31st March, 1851, at 9980, of whom 4635 were at large. The Inspectors of Lunatics, in their last Report, (if we exclude epileptics at large and in workhouses, for those in asylums must be supposed to be insane,) fix the number at 11,452, of whom 5441 are at large. A comparison of these returns, made at an interval of between five and six years, and obtained through the same sources of information, shows a considerable increase in the amount of insanity in Ireland."—*Report*, p. 2.

During the five years 1852–56, 6197 cases (3249 males and 2948 females) were admitted into the district asylums, and the daily average of patients during the period was 3467. The total *discharges* amounted to 3715, (1936 males, 1779 females,) the *recoveries* being 2535, (1237 males, 1298 females,) and the *non-recoveries* 1280, (699 males, 581 females.) The total *mortality* was 1363, (722 males and 641 females.) If the proportion of recoveries and deaths be calculated upon the admissions, it is found that the average ratio of the former during the five years was 39·2 per cent., of the latter 10·5 per cent.; but if the more correct calculation suggested by Dr. Farr be made, the proportions being calculated upon the mean of the admissions, discharges, and deaths — this mean giving the nearest approximation to the number of cases treated—the following results, *per cent.*, are obtained: *Recoveries*, males, 21·9; females, 21·2—total, 43·1. *Deaths*, males, 12·8; females, 10·3—total, 22·7.

The distribution of the deaths in the different months was as follows:—

January	125	July	57
February	106	August	107
March	147	September	76
April	125	October	124
May	127	November	101
June	116	December	106

From these figures it would appear that the maximum mortality was in spring, the minimum in summer.

The accompanying figures show the proportion, *per cent.*, of *recoveries* within different periods of time:—

	Males.	Females.	Total.
Less than three months	15·1	13·4	28·2
More than three months and less than six months	11·9	12·8	22·7
More than six months and less than one year	11·5	11·6	23·5
More than one year and less than two years	6·2	5·3	11·6
More than two years and less than three	2·4	2·4	5·3
More than three years and less than four	1·3	0·9	27·9
More than four years and less than five			12·3
More than five years and less than six			9 0

More than six years and less than seven	4·9
More than seven years and less than eight	3·2
More than eight years and less than nine	2·4
More than nine years and less than ten	4·5
More than ten years	0·8

Thus, more than one-fourth of the recoveries took place within three months after admission into an asylum; one-half within the six months; and three-fourths within twelve months.

Of the admissions during the five years, 22·0 per cent. (11·9 males, 10·3 females) had been in an asylum once before; 2·5 per cent. (1·1 males, 1·4 females) had been twice before; and 1·1 per cent. (0·9 males, 0·8 females) had been thrice.

The form of mental disease and special tendencies, as well as the probable curability and incurability of the patients in the different asylums on the 1st January, 1857, is shown in the subsequent summary.

The figures show the percentage upon the total number of patients, namely, 3824, (1949 males and 1875 females.)

	Males.	Females.	Total.
Mania, Acute	13·4	13·1	13·2
" Ordinary	14·7	13·9	14·3
" Chronic	31·1	26·9	29·0
Moral Insanity	4·2	3·6	3·9
Melancholia, (whether or not attended with delusions or occasional excitement)	9·3	14·9	12.1
Congenital idiocy	3·1	1·4	2·3
Congenital imbecility	2·9	3·0	2·9
Other forms of mental disease:—			
Dementia	21·0	27·7	21·9
Epileptics	8·7	4·8	6·7
Dangerous to others	12·6	10·1	11·1
Suicidal	3·6	2·9	3·2
Of dirty habits	12·9	13·2	13·1
Received from jails:—			
Dangerous lunatics	23·7	14·2	19·0
Criminal lunatics	1·6	0·3	0·9

The probability of *recovery* among the whole of these cases was as follows:—

Probably curable	28·5	32·6	30·5
Probably incurable	71·4	67·3	69·4

The percentage of patients paid for by their friends was, 1·5—males, 2·0; females, 1·0.

The assigned *causes* of the mental disorder in the cases admitted into the district asylums during the five years 1852–56 may be divided into two classes, the *physical* and the *moral*. In the *first class* there may be enumerated, of those cases in which a cause is distinctly specified, 722 males and 707 females; in the *second class* may be summed up 262 males and 461 females. The principal physical causes mentioned, and the number of cases in which they are supposed to have been effective, are as follows:—

	Males.	Females.
Heritage	360	333
Epilepsy	81	44
Intemperance and dissipation	40	60
Mechanical injuries	63	17
Injuries of the head	28	4
Fever	31	52
Child-birth	—	58
Cold, excessive work, and destitution	18	10

The principal moral causes named are:—

Grief	47	85
Fright	30	46
Grief and fright	30	46
Total from these emotions	107	177
Loss of property	60	40
Jealousy and love	30	45
Disappointment	19	41
Death of a member of the family, or of friends	10	44
Death and emigration of a relative or friend	4	32
Domestic trials	16	19

The *occupation* of the lunatic prior to his insanity is mentioned in 3794 instances, of which the accompanying list gives a brief summary:—

Laborers	1445
Servants	523
Agricultural pursuits, farming, gardening, etc., (farmers, 372)	507
Handicraftsmen	427
Tradesmen	239
Dress and bonnet makers, and needlewomen	168
Policemen, soldiers, excisemen, and pensioners	151
Professions	124
Clerks	72
Shipwrights, sailors, boatmen, and fishermen	44
Paupers	29
Gentry	19
Engaged about horses	18
Prostitute	1

The data are not given by which the relative proportion of these figures to the average number of individuals living in each of the specified classes of occupation could be ascertained for the period in question.

The value of the statistics furnished by the district asylums is in several respects much diminished from the want of a comprehensive system of registration common to all the asylums. But this is a defect which is far from being peculiar to the Irish asylums.

ON EXCISION OF JOINTS.

By R. Garner, F.L.S., Senior Surgeon to the North Staffordshire Infirmary.

Any information embodying the results of excisions of the large joints is particularly interesting at the present time, especially as regards those of the lower extremity. The merit of the operation on the knee, at least as to its general application, has yet to be decided: it is especially desirable to know in what state the limb is generally found at an advanced period after the operation. With respect to the life of the patient, it has been well ascertained that the operation is tolerably safe; our excisions of the knee at the North Staffordshire Infirmary, five in number, have, apparently, in no instance placed life in danger.

Two adults continue regular patients: the first, a girl of 19, just made out-patient, operated upon on November 24, 1860; the other, a middle-aged man, still an in-patient, in whom the knee was excised on April 6, 1861. Both these cases are considered to be doing very well, both as to the state of the limb and the general health. The young woman still uses crutches, and has some unhealed places on the knee; the man's case is particularly promising, with only one open point. A scrofulous boy having, in addition to the knee, a stiff but quiet elbow, was also operated upon on December 1, 1860, and appears to be going on well, being occasionally brought to the infirmary in a perambulator; the knee firm and straight, but with two open points.*

But with respect to the more important question, the result at a later period of the treatment, the following cases are more interesting: A girl of about seven had her knee excised January 3, 1860, by a U-shaped incision, the patella being left. It may be said that the wound healed by the first intention, and she was discharged well in three months; but upon inquiry (May, 1861) the limb now appears to be a good deal atrophied, the child going about on crutches, and an abscess threatening below the knee. The last case is a young woman of about twenty; excision March, 1860. In April, 1861, the patient used crutches, but could walk a little without them; the leg looked well, but there still existed two unhealed spots in the knee. June 3d.—She can now walk two miles without any support from crutches.

One might at first suppose a person with an excised knee to be in much the same position as a patient with a compound fracture, in which it has been necessary to operate on the ends of the bones; but the probability of recovery with a strong limb is evidently less in the excision, as there is risk of diseased parts being left, with a bad constitution to boot, besides the muscular system being left in an abnormal state in the limb. The treatment of such cases is very prolonged and expensive, large quantities of wine being commonly consumed, and sometimes removal to the sea-coast being required; but this is of secondary importance to the consideration of the future state of the limb. Without prejudging the case, it may be observed that a weak leg (not reckoning upon its liability to fresh disease) may, in point of utility, be no better than a wooden one; for the laborer the latter would probably be preferable, while the former might be more desired for the counting-house, studio, or drawing-room. The now-ascertained fact that in young subjects the limb often ceases to grow, is a strong argument against the operation in them.

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* August 6, 1861.—The progress of the first patient, the young girl, has not been very favorable, it having been necessary to straighten the limb under chloroform. The leg had been retracted backward, apparently a not uncommon circumstance. It might, perhaps, be well to divide the tendons of the flexor muscle in such cases. The man is still doing well, though it has been necessary to gouge away a prominence of diseased bone. The boy walks without crutch or stick.

The hip-joint was dextrously excised in one case by Mr. Folker, who also was the operator in two of the above knee cases. It was necessary to gouge the acetabulum, and indeed it was found that the disease could not be totally eradicated. The man sunk of exhaustion ten weeks after the operation, expressing, however, that his sufferings had been alleviated by it.

A friend of the compiler of this paper, Mr. Davis, in his presence very cleverly excised the whole of the ankle in a youth, a private patient, in January, 1858. In May, 1861, the joint had perfectly healed and was sound, but, as is the case in other instances on record, its looseness prevents its being competent to support the body in a very satisfactory manner. In fact, the whole limb is extremely atrophied.

In four adults brought into the infirmary, with compound dislocation or fracture, it has been necessary, or at least thought best, to excise the astragalus. Two of these patients did well, and have now useful limbs; two, however, died of bad diffused inflammation and its disastrous sequelæ.

Our cases of excision of the elbow for disease have been only five, with two partial ones in cases of accident, which did well. Of the five, three were perfectly successful. One, a middle-aged woman, wished for amputation some months after the operation, which was, consequently, done, with recovery. The fifth was the case of a scrofulous and consumptive girl, in whom a portion of the opposite hand had been previously removed; the patient died, I believe, some weeks after the resection, the joint showing no disposition to heal or consolidate. One difficulty in this case was to keep the ends of the bones from riding over each other. It might be well to try the effect of sawing the bones obliquely to prevent the last occurrence, and this might obviate a tendency of the arm to become extended when getting well, which is sometimes a troublesome circumstance. A friend, who has experience in cases of excision, has, in the knee, sawn across the bones, so that, when they were brought into apposition, the leg was a little bent, and in consequence, when cured, practically longer, from the patient walking on the front of the foot; and this he did well.

Mr. Bent, of Newcastle-under-Lyme, afterward surgeon to our infirmary, excised the head of the humerus in 1771, the case being the third excision of any large joint in England. The scapula appears to be often implicated in diseases of the shoulder-joint, at least so we have found it post-mortem; such cases frequently get well without operation.

Certain operations on the long bones may justly be called excisions or resections. In one case the whole of the ulna, except the upper quarter and a bit of the lower extremity, was removed in a young girl. There was no surrounding bony deposit in this case, and the ulna, when loosened at its extremities, slipped out, as it were, into the operator's hand, the arm recovering, with its use unimpaired in all respects. In other cases, portions of diseased fibula have been removed with the best effect, or even of the tibia. In a case of the latter kind, where a good piece of the bone was taken away, the fibula prevented the approach of the extremities of the tibia, and the intervening chasm was not filled up, from the deficiency of bony deposit; in this apparently hopeless state the patient, in desperation, took to walking, and the result was, that the ends of the tibia were brought nearer together, and firm union took place. The leg was, of course, a little bowed, which, however, was of trifling consequence, the patient being a female, and her dress concealing the want of symmetry.—(*Med. Times and Gazette.*)

PENETRATING WOUND OF THE HEART.

CASE IN WHICH DEATH TOOK PLACE TEN YEARS AFTER. By *Dr. Mühlig.*—Dr. Mühlig states that as far as he is aware only three cases (related by Velpeau, Laugier, and Latour of Orleans) are on record in which life has been prolonged for some years after a wound of the heart. He therefore relates the following remarkable case. The subject of it, a mason, ten years before he came under the author's notice, had received a blow with a stiletto on the left side of the sternum, the cicatrix left after the healing of the wound being there still visible. Although the man's life continued awhile in danger, he recovered so well as to be enabled to follow his employment without any inconvenience, always, however, perceiving a bellows-sound in the region of his heart. He came to the hospital with alarming symptoms only a few weeks prior to his death, excessive dyspnœa, anasarca, and a very intense bellows-sound being present. This last was a double bruit, accompanying the systole and diastole, and entirely obscuring the physiological signs. The man got worse and worse, his end being hastened by the supervention of gangrene. At the autopsy the left lung was found connected throughout its entire surface to the thorax and pericardium by means of old adhesions. On cutting into the pericardium it was found to be intimately adherent to the heart throughout its whole extent, so as to require strong traction for its removal. On the side of the right ventricle it could not be removed without cutting, and here was felt a hard, prominent body, covered by the sternum, and which at first was believed to be indurated fibrin. The heart was considerably increased in size, its hypertrophy principally implicating the left ventricle, the cavity of which was also enlarged and elongated. The right ventricle seemed to form only an appendix, and on the inner surface of its wall a rounded aperture, lined with cicatricial tissue, was observed, through which the little finger could be passed into a sac about the size of a small walnut. At the bottom of this was felt a hard body covered with asperities, giving very much the sensation imparted by a carious bone. This was the same indurated body which had been felt through the pericardium. On opening the sac it was found to be a partial aneurism of the heart, containing an incrusted fibrinous concretion, and having its wall solely constituted of the two layers of the pericardium fused into one, no trace of muscular fibres being present. The aneurism was situated at the union of the two upper thirds with the lower third of the wall of the right ventricle; and exactly opposite the aneurism there was a hole in the intraventricular septum leading into the left ventricle, which scarcely admitted the point of the little finger. But on the side of the left ventricle this hole was twice as wide, and it was completely lined with cicatricial tissue, which extended several lines into the left ventricle, forming above a semilunar fold which partially closed the orifice, a similar fold below floating freely in the cavity of the ventricle. Close to the free edge of each semilunar valve of the aorta was a cauliflower excrescence, larger than the size of a pea, and viewed from the cavity of the aorta the valves exhibited a solution of continuity near their free edges, a probe passing through this into the middle of the fungosities. The substance of the heart was of a pale red, with yellowish streaks, and it was flaccid and friable. The auricles were much dilated, and their walls were thinned.—(*Presse Médicale Belge*, 1860, No. 43; *Med. Times and Gazette.*)

Editors' Table.

Baunscheidtismus.—In our last editorial table-talk we brought up a picture of insanity, painted by the master-hand of genius—the Life of Don Quixote, the renowned Knight of La Mancha, by the inimitable Cervantes. On the present occasion we are required, it must be as a penance for previous shortcomings and omissions, to say something about a cloudy daub, which has neither life nor fancy to recommend it, nor even the negative merit of unintentional caricature, to render it amusing. To be lost in a thick fog, with nothing but a will-of-the-wisp to guide us, to try and steer by a compass which will not traverse, or to listen to the insane clutterings of an idiot, are no small hardships in their way; but they sink into insignificance compared with the punishment of being obliged to read through a small volume now on our table, entitled "*Baunscheidtismus,* by the Inventor of the New Curing Method, Charles Baunscheidt."* The dream-land of German fancy pleases while it mystifies, German lore commands our respect, and its conjectural criticism, even when it runs into the transcendental, is ever suggestive, if not directly instructive; but, woe to us, there is neither fancy, nor learning, nor criticism, any more than there is philosophy or pertinent fact, in the present work. In vain shall we look for any reasoning in pages which abound in commonplaces and platitudes, joined together without method, and unenlivened by a single guiding principle in medical science. We are continually reminded of an ignorant man who would make some show of learning, of a pretender to inventive genius who is essentially and incurably stupid, and of a pseudo-philanthropist who is intent on replenishing his purse by taxing the credulity of his fellow-men. In this last device, Baunscheidt has, we learn, been quite successful, and has already become possessor of a large fortune.

Much as we have ever reprobated and despised quacks and quackery, we cannot but acknowledge that the criminals may plead strong temptation to palliate their nefarious deeds. Among these are the readiness and almost eagerness of people of all classes to be duped, and the pleasure which they who deceive must experience at the success of their efforts, as implying a mental superiority for the time being. A quack is, continually, carrying on a hoax on a large scale: he will sometimes succeed in victimizing a whole community, while exciting also its wonderment and eliciting its applause: he is, for the nonce, the adroit juggler, laughing with and at his admirers, who willingly replenish his purse, in return for his having deluded them. There is an innate love of the marvelous in mankind, and, provided this love can be gratified, they will not criticise very closely the selection of means, even though these should border on imposture. The quack may, therefore, be sure of the ready sympathy from the crowd, whenever he makes boasted promises of possessing a panacea or an elixir of life. The more extravagant his pretensions the greater their belief. He is also linked to the crowd by a community of ignorance, general and special — general, in all that relates to science and the rules of logic—special, in all that relates to the structure, functions, and diseases of the human body, and of the successive and alternate use of remedies. Hence it follows, as a result of this sympathy, that an exposure of the ignorance, illiterateness, deception, and mendacity of a quack by an experienced and well-read physician, is not only coldly received by the multitude, but is regarded by many in the light of persecution. We wish that we could find an excuse of ignorance in extenuation of those who are so ready, on the slightest grounds, and often without any grounds at all, to give their certificates in favor of the last quack remedy. Ignorant they doubtless are of the subject—the nature of the disease, and the circumstances under which it can be most readily and safely arrested; but as clergymen, lawyers, and litterateurs, they will not be disposed to plead ignorance, in bar of judgment, for encouraging fraudulent pretensions to cure diseases which are incurable, or other diseases, by means which are not in reality employed. The radical defect in the minds of these heedless certifiers is the want of a matured system of ethics, on the one hand, and of the habit of logical reasoning on the other. A little knowledge of the laws of evidence would make them, in an intellectual point of view, refuse at once to lend their names in attestation of a thing which has no support from the first elements of these laws, as it certainly would, ethically considered, make them shrink from encouraging that which bears on its face the stamp of imposture.

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* First English edition, translated from the sixth original edition. By John Cheyne and L. Haymann. Bonn.

If ignorance of the law excuseth no man, so neither ought merely good intentions to excuse a man of average intelligence and education from certifying to the truth of that which he has not taken pains to examine and scrutinize, by the aid of all the lights at his disposal. A good-natured yieldingness to oblige a needy, forward, and hypocritical applicant, by our lending him our names, will be a small offset against the injury to the health and pockets of a large number of credulous persons, who are induced, mainly on the strength of our certificates, to purchase the nostrums of the said quack. But it may be asked, are people injured by this means? This is the question which every thoughtful and conscientious man will ask himself, after he has solved, to his own satisfaction, the other question, viz., whether the articles which the quack asserts that he employs do really enter into the composition of his nostrum? and if so, whether said articles are not inert or powerless, as ascertained by the ample experience of medical men? and again, whether the same substance or compound can be a cure-all, adapted to diseases of the most various and opposite characters? Even if, without entering into a rigid scrutiny of the merits of the particular nostrum, a person would reflect for a moment, that as the whole history of quackery shows it to be an uninterrupted series of fraud and imposture, so must there be a violent presumption that every new exhibition of it is also false and fraudulent. A single pertinent fact should convince the most determined supporter of quackery. It is, that no one of the hundreds of cure-alls continues in use and vogue beyond the lifetime of its proprietor and putative inventor.

We have touched on the palliation of quackery by the strong temptations to engage in it with a prospect of success. That which many regard as a valid plea in favor of the quack, or at least in abatement of public censure, if not of punishment, does not impress us with any weight. We allude now to poverty. Were such a plea admissible, law and ethics would have to wink at the offense of the sturdy beggar, who steals a loaf to allay the pangs of hunger; of the forger, who is impelled to extricate himself from pecuniary embarrassment, which will, if not relieved, be followed by the destitution of his family; and of a pickpocket, urged to rob by similar considerations.

Thus much on quacks and quackery in general. We now begin our ungracious task of noticing an individual exhibition in the person of Charles Baunscheidt, and in his book, Baunscheidtismus. This inventor of the Lebenswecker and reformer of medical doctrine and practice, like nearly all others of his class, began his career without any previous training, and in entire ignorance of the subjects of life and disease, which all at once, moved thereto, it must be, by a sudden fit of inspiration, he discusses in the most bold and confident manner. Possessed of considerable mechanical ingenuity, he first came before the public as the inventor of "a proof weapon" and a new helmet, which were adopted in the Prussian army; and next he directed his attention to the construction and perfecting of plowing machines. The prevalence of a destructive epidemic disease among horned cattle led him to meditate "on the homœopathic principles of Hahnemann, which pleased him, and a thousand different experiments upon animals proved to him that it deserved to be preferred to the violent allopathy." The nature and scope of these experiments are not mentioned.

"Later on, he wrote a book on splenitis (fatal distemper of cattle), wherein he advocated the treatment of horned cattle on the principles of Hahnemann." This do-nothing treatment was, very likely, preferable to the crude practices of ignorant cow-doctors. With so restless a mind as that of Baunscheidt, the transition from treating the animals of the bovine class to undertaking the cure of the members of the genus *homo* was easily made; and behold him now a medical man, ready, of course, for any and all vagaries of doctrine and practice, now that he had been smitten with homœopathy. The immediate incitement to this course was his grief at the death of a friend, who fell a victim to a lingering disease—name or nature not stated. The sympathizing Baunscheidt kept up the spirits of his friend by such words as the following, in reply to a remark of the sufferer, that physic could afford him no relief: "They [the physicians] have half killed you by medicaments, my dear friend!" Then follows a rhapsody, in the jargon which pervades nearly every page of the book, and in which sense and grammar are alike forgotten. "It is a misdemeanor crying to heaven, when the medical faculty have made it a practice for the last thousand years with the sanctuary of human life; that must be changed, if one could only induce everybody to study, and learn to know the connection of the single parts of his own body, then every man would become the best physician for himself, become a free agent, and thus would the old medical science fall away, and at length sink into utter oblivion." It did not occur to this would-be reformer, that, for many hundreds of years past, one of the divisions of medical science consisted in a study and knowledge of the single parts of the human body. The field of anatomy was to him a *terra incognita*. He must have thought that he was the first to enter on it; for, when he began dissecting sheep, swine, dogs, and cats, and when he made excursions over mountain and valley, and studied "in the woods and in the fields the botany of indigenous plants," he seems not to have been aware that others had collected information on these points before him. How long Baunscheidt would have continued in this course of observation and study cannot be conjectured; but it had its termination in one of those lucky incidents or chances which occur so often in the history of genius. His biographer, who is continually straining after effect by magniloquent phrases and odd analogies, ought to have told us that, as the theory of gravitation was suggested to Newton by the fall of an apple from the tree, and that of the oscillation of the pendulum to Galileo by the swinging of a lamp suspended from the ceiling of the cathedral at Pisa, so was the idea of the Lebenswecker—the life reviver and restorer, the curer of all ills—suggested to the philosopher Baunscheidt by a swarm of large gnats lighting on a gouty swelling of his left hand, which had become ulcerous, and leaving behind them innumerable marks of their stings. But "how brightened with joy was the eye of the examining thinker, when, a few seconds afterward, he perceived that the whole of the pain in his hand had passed away through the openings made by the stinging probosces of the gnats! and Baunscheidt, as he had formerly said that matters in the materia medica ought to be changed, now cried out exultingly, 'they must be changed, and I have found out the way *how* to do it!' Thus this accidental circumstance," continues the biographer, "served him as a basis whereon to found the invention of a mechanical instrument which is calculated at all times to apply artificially the salutary stings of the gnats, and by such means to awaken again into life the benumbed limbs. Baunscheidt invented his Lebenswecker and his famous 'oleum Baunscheidtii'—the latter supplying the kind of liquid left in the wounds made by the little piercers of the gnats, which convey the matter into the channels of the rheumatic substances."

The modesty, logic, pathology, and therapeutics evinced in the following can scarcely be equaled:—

"So easy as it is to be ill so easy must it be to become well; provided old age, with its natural weakness, is not operating against it. Wherever a system exists which is not able to cure a man under fifty years of age, and being still in the vigor of his life, it is not a life-healing method, and it is of no value. Rheumatism and gout are," he says, "the mothers of almost all other diseases. The remedy which overcomes these diseases is, therefore, their master, and that remedy I have found out."—Q. E. D. Another Euclid, exclaiming "Eureka!"

The "Introduction" to this precious

volume treats of "life and its design," in a mystic vein, in which truisms are disguised and philosophy is in harlequinade. In the section headed "What is life?" we read, as part of a luminous answer, the following: "If the homogeneous original structure of the body be supposed the first agent, and the specific substance as the second, we have then the third substrate member, continual movement. May not this be identical with the primeval cause of life?" A fine specimen this, truly, of the dim-obscure. A little farther on we are enlivened by the paradox contained in another question: "Would it be censurable to conclude that prussic acid in its intensity, and possessing the specific power of destroying life, contains the embryo of life's fluid?" The answer must be made by the initiated in Baunscheidtismus. To them, also, as alone able to appreciate their contents, we must leave the sections on "pure spiritual life" and "spiritual physical life." The section on "physical life" gives the gratifying assurance that "life can be no other than the primeval power or the fundamental structure of our being." Speaking of the "Aims of Life," there peeps out from a thick fog this luminous proposition: "that the primeval aim of human life is, at first, no other than the right to life." In an ordinary postulate, a claim and a right are associated—an aim looks to its attainment irrespective of prior right and regardless of attendant wrong.

The author begins his section "on the remedies to preserve life" by a few cursory remarks on the neglect of physical education, in seeming ignorance that the subject has been treated, again and again, with a hundredfold more force and point than he imparts to it. Passing to the question, of the cure of diseases, the author, assuming his own ignorance as the representative of that of educated medical men, advises them, as matters "which the physicians have not known," "to study the system of our own bodies and the countless bodies that surround us, and to which we have a relative position." This self-made doctor and suddenly-illuminated medical philosopher shows his persistent ignorance of the fact that physicians had ever studied anatomy; and that the operation on the human frame of the "circumfusa" and other material agents occupied their attention from the time when Hippocrates wrote his great treatise on Air, Water, and Places, down to the present day, when we have so many capital treatises and reports on both public and private hygiene.

After many pages of pointless assertions, heavy dogmatism, and muddled commonplaces, the great reformer condescends to

> "give a comprehensive description of the manipulating and medically operating power of an instrument that has gone forth into the world under the characteristic name of the 'Lebenswecker,' which declares its name and high importance, and which manifestly declares war against most if not all of the old and venerable apothecary's boxes. But what does this singular instrument consist of? Nothing more than of fine-pointed needles fixed in a round plate of steel. These produce artificial pores on the epidermis by an almost painless operation, by which all virulent matters noxious to health, and which lay in different portions of the body, are gradually removed by volatilization, it must be evident to every impartial and reflecting mind that if, instead of applying pernicious medicines *internally*, working their dark and mysterious ways in the body, we can *externally near the seat of the disease*, relieve the suffering patient by means of the Lebenswecker, we maintain that we have fulfilled our long-sought panacea."*

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* The italics are in the text.

Whether the running of sentences into each other, in the above extract, has been the work of the author, or is to be credited to the translator, who is evidently ignorant of the grammar and construction of his own vernacular, we do not pretend to say. We have given the text as we find it, but must be excused from inflicting on ourselves and our readers the transcription of the notes by which it is accompanied.

Unable to fix his attention on the few main points which have any show of practical bearing, Baunscheidt could not finish this description of his wonderful instrument—wonderful, in his mind, by its simplicity and the astonishing effects alleged to result from its use—without a long intervening chapter headed "Practical Instruction of the Oleum Baunscheidtii." After this comes a chapter headed "More Precise Description of the Lebenswecker and its Manipulation," with drawings. The complete instrument is represented to consist of an ebony or horn box or tube, the upper part of which being unscrewed, reveals a number of needles fixed on a metallic plate. This plate is attached to a brass spiral spring beneath, which, when the instrument is used, is drawn up into the tube by a handle to the extent of one and a half to two inches. The release of the handle causes a recoil of the spring, and a consequent projection of the needles and their penetration of the skin, to which the mouth of the tube had been previously applied.

The application of the Lebenswecker must be followed by that of the oil of Baunscheidt, (*oleum Baunscheidtii,*) which is all-important for the bringing about of a cure. The inventor of this still secret compound professes to imitate in it the fluid that runs from the gnat, which he declares to be "very salutiferous for the body, because it produces an irritation of the skin, which tends to remove efficaciously and promptly all infectious diseases." If there had been any lurking doubt of the virtues of the oil, and the good sense and integrity of the inventor, it cannot fail to be dispelled by the averment, that this oil "serves to keep together the galvanic juncture of the polary needles, and being a destructor of rust, is, consequently, an especial conservator of them." Every part of the skin touched by the Lebenswecker is to be well anointed with the oil, by means of a feather or a camel's-hair brush. There ensues, on this application, an eruption similar to millet-seed, the size and extent of which vary "according to the quantity of unsound matter in the body; the skin afterward, in a very short time, assumes a warm and healthy red color, and is very expansive and pliable: the patient, after feeling a crawling sensation in his skin, perceives a more general activity in the whole body, and seems in a certain degree transported to a warmer climate, and thus all the body becomes sound and healthy." What a grand termination to so small a beginning!

We next have what is called "Universal and Practical Instruction," which opens with the following aphorism, a true specimen of the enlightened dogmatism of Baunscheidtismus:

> "1. Because every dangerous disease has its principal seat in the back, it is agreeable to nature to operate there first, to deliver life from its morbid pressure, along the vertebral column of the spine, in the left and right of it, (see the copper-plate)."

How grateful the reader of this sage direction must be at the careful iteration, "the vertebral column of the spine," so that there can be no mistake as to the precise part in which life is imprisoned, and from which it is to be set free. The patient is cautioned to avoid, during the first three days after the application of the Lebenswecker, all draughts of air and moisture: "The morning ablutions should occupy only a very short time; he should not cleanse any vegetables, and should avoid cellars and other damp places." Our readers must not ask us to tell them what is meant by the above cleansing. No change in the diet is required, except the avoidance of the use of acids.

The copper-plate referred to above represents the nude forms of Adonis and Venus united in a most affectionate embrace; one-half of the anterior surface of the body of the former and the entire back view of the latter being exhibited. The visible parts of the skin of each of these personages is freely spotted, as if just marked with the needles of the instrument, or rather with the pustules of small-pox. The more favored regions are those of the clavicle, the chest near the shoulder, the right hypochondrium and abdomen, the inside of the forearm and calf of the leg, on Adonis; and the back on each side of the spine, more especially in the upper or humeral region, and at the lower end, "near which lies the seat of hemorrhoidal diseases," also over the hip-joint and the calves of the legs, on Venus. This picture, at first glance, might be thought to suggest erotic ideas, but any feeling of this nature must be promptly extinguished by the seemingly eruptive disease of these personages; and, if we adopt the view of Baunscheidt, by the thought of crude humors oozing out from the fair skins of Love and Beauty. Happily, we have no female readers, else we should tremble for the shock to their sentimental loves for the next six months, caused by this mere allusion. How will it be with those who read the book itself?

We would apologize to our readers for occupying any more of their time by quoting the following precious sample of Baunscheidtismus, were it not to furnish additional and conclusive proof of the justness of our strictures, harsh as they may seem, on the impudent pretensions of the new teacher and would-be reformer:—

> "Inflammation. The character of inflammation consists in a state of the bodies of blood in the capillary vessels.* Brücke explains the cause by the straitening of the arteries. The incentive which calls forth the inflammation is urging on the fibres of the artery to a spasmodic contraction, by these means entering sluggishly, and ultimately a stoppage takes place, and as the interior diameter of the vessels must become less, and the small bodies have no longer a free current, every mutation is capable of causing only a reaction by the nerves; that the mutation calls forth a neuralgic congestion of the nerves, by which the contracted fibre in the artery is urged on to the spasmodic contraction; the healing process must, therefore, at first, be a compensation of the nervous matter—a removing of the neuralgia—then the vessel's natural diameter is restored, the circulation becomes free, and the inflammation is removed. We apply, also, incentives which are calculated to dissolve the imflammation. Particularly important is this method upon the noble organs, such as the lungs, the brain, the openings in the stomach and the intestines are attacked."

In the chapter already referred to, the title of which is expressed in such original English, "Radical Instruction of the Oleum Baunscheidtii," the author gives a long enumeration of the diseases cured by the instrument and the oil. The most serious and intractable are dismissed in as brief and summary a style, and their cure announced with as much confidence, as the slightest disorders. It must be consoling for us to learn that yellow fever, which the new-light German pathology puts in the same line with jaundice, can be quickly and radically treated by the Lebenswecker—the instrument being applied "strongly on the back, and on the whole surface of the stomach and belly, and particularly on the right side near the liver." The doctrine of sympathetic irritation of other organs with the gastro-intestinal, as taught by Broussais, is pushed *à l'outrance* in the present work. Thus we read:—

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* "Capillary or hair vessels are called in anatomy the finest vessels, but are formed for passing *over* the arteries into the nerves."

> "Affections of the uvula, hoarseness, and chronic diseased windpipe have their seat of disease in the bowels, and the Lebenswecker, applied on the back and on the right and left side of the neck, will have the desired effect."

One would hardly expect such a deduction from the premises. To this family belong diseases new to the American physician, viz.: Inflammation and Consumption of Adam's Apple. They are treated like the former, and of course with the same success. That persistent and most disagreeable squatter in the human body, the tapeworm, is compelled to leave in disgust by the Baunscheidt system. The lockjaw, in tetanus, is cured by the same means, with equal readiness: and so on through the nosological catalogue.

Baunscheidt will not admit of any analogy of his fashion of acupuncture to that in previous use, nor to scarification by lancets, as in cupping; nor must the eruption caused by his ointment be compared for a moment to that following the application of tartar emetic or other means of causing an artificial cutaneous irritation. Small-pox is to be prevented by substituting, in all cases, "the cure of the Lebenswecker" for inoculation. Vaccination is proclaimed to have increased scrofulous complaints in a fearful manner, and given rise both to scrofula and syphilis. After speaking of the pustular eruption on the udder of cows being caused by the "grease" of horses, our sage reformer asks: "Now can any rational person suppose that the venom of a scabbed animal possesses any healing properties?" He talks on the subject of vaccination like a denizen of Sleepy-hollow, whose senses and intellect have been torpid for the last fifty years.

"The Lebenswecker a Prolonger of Life," is the heading of a chapter. Were we obliged to follow any further the author in his garrulities and inanities, our own life would certainly be shortened; and, to prevent this, and anticipating also the exclamation of our readers, *Ohe jam satis!* we close his book with gratitude for the relief thus obtained, and a firm resolve to tear ourselves away from such enforced company at any future time.

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BATTLE OF BULL RUN—A VISIT TO THE WOUNDED.—This battle, fought on the 21st of July, will long be memorable in the history of human strife, both for its sanguinary character, and for having afforded the surgeons of this country the first great opportunity for studying the nature of gunshot wounds. Prior to that period, as stated in our July editorial, we really never had any severe engagements, either on land or on sea. The battles during the Revolution, and even those during the late war with Great Britain, resembled in their results, in a surgical point of view at least, skirmishes rather than great fights. The number of slain and wounded probably never, on any occasion, reached one-third the number of killed and wounded in July. The conflict at Bull Run must have been terrible; the slaughter immense. The forces on both sides are said to have fought with extraordinary bravery. The Minié ball, far more destructive than the round, and now almost exclusively used by the troops of all civilized nations, did immense execution. Hundreds upon hundreds must have been killed and wounded by shells, grape-shot, and cannon ball. Of sword and bayonet wounds the number seems to have been exceedingly small, as the men did not get into close quarters.

It is impossible, even now, nearly a month after the battle, to ascertain the number of wounded on either side. We have not seen even an attempt at the formation of a correct opinion upon the subject. During the hasty retreat of the Union army, nearly all those that were badly injured were left upon the field, and of course fell into the hands of the Confederates, where they still remain. Most of the rest found their way back to camp, or were picked up on the road, and sent to the hospitals at Alexandria, Washington, and Georgetown. During our visit to these institutions, forty-eight hours after the battle, we saw nearly four hundred of those unfortunate fellows. That this constituted only a small moiety of those who thus suffered may readily be imagined, if any confidence is to be placed in the report that many of our wounded are at Richmond and at Manassas.

The morning after our arrival at Washington, having learned that a large number of wounded were at Alexandria, we repaired at an early hour to that city, in company with Dr. Newell, Ex-Governor of New Jersey, and a highly intelligent member of the profession. Through the courtesy of Dr. A. Lawrence Sheldon, of the army, in charge of the hospital lately fitted up there by the government, we were permitted to accompany the assistants, Dr. McClellan and Dr. Thompson, into the wards, to examine the cases. The number of patients was one hundred and sixty-one, nearly all from Bull Run, the remainder having been wounded at the affair near Centreville, on the 18th of July.

Among the more interesting cases which we witnessed here, during the two mornings spent within its wards, were the following:—

1. William Grantman, aged 22, 1st Massachusetts Regiment, was shot on the 18th of July, in the engagement near Centreville, the ball, a round one, entering the back part of the left arm, about two inches and a half above the elbow, and ranging obliquely upward and outward, emerged a short distance from the axilla. It then passed into the chest immediately below the level of the axilla, and lodged behind, midway between the scapula and the spine, where it was cut out by Dr. Sheldon. The wound in the arm was subcutaneous. No bad symptoms supervened, and when we saw the man last, eight days after the receipt of the injury, he was in a fair way of recovery.

2. William Holland, aged 21, 2d Wisconsin Regiment, wounded at Bull Run, July 21st. The ball struck the jaw at its symphysis, breaking but not shattering the bone, knocking out two of the front teeth, and lodging on the right side, under the angle of the jaw, where it still was at the date of our last visit. Severe swelling, with fever, followed the injury; and, although the

man was able to walk about the ward of the hospital, there was reason to believe that his convalescence would be tedious. The local symptoms were strongly denotive of the formation of an abscess in the upper part of the neck.

This man informed us that he had four brothers killed in battle, and that he was the son of a physician in Wisconsin; but, upon inquiry, it was found that he was remarkably illiterate, and even unable to write his name.

3. John Bedeman, agêd 31, 1st New Jersey Regiment, wounded on the 18th of July. The ball, a large one, probably conical, passed through the upper part of the left thigh and the head of the penis, leaving four openings, those in the penis being separated merely by a small bridge of tissue. All the wounds were healing kindly, and the patient assured us that he had not suffered from any erections.

4. Vernon A. Marsh, aged 19, 2d Vermont Regiment, was shot on the 21st, the ball, a round one, striking the left side of the face, over the jaw, passing under the skin and muscles, and lodging on the opposite side, in the lower and back part of the neck, from which it was removed, soon after, by Dr. Palmer, the surgeon of the regiment. The jaw escaped fracture, and there was no bleeding in the mouth, indicative of injury of that cavity. With the exception of some pain on the left side, he was doing perfectly well, there being hardly any swelling along the track of the wound.

5. J. G. Cobb, aged 35, 71st New York Regiment, wounded on the 21st, probably by a shell, which carried away the left portion of the upper lip with a part of the corresponding side of the jaw and nose, causing a frightful gap, which, in the event of his recovery, must necessarily be followed by great deformity, remediable only by an extensive plastic operation. The nose, at the time of his admission, was hanging on the right side of the face. It was restored to its proper position, and secured by suture and adhesive strips. When we saw Cobb last, on the 26th of July, he was altogether comfortable, and in a fair way of rapid convalescence. His wound had bled considerably, and this was probably one reason why he was progressing so favorably.

6. Amos G. Scoffield, aged 28, 1st Minnesota Regiment; ball entered the back of the neck, on the left side, nearly midway between the mastoid process and spine, and a short distance below the level of the former, knocking out four of the upper teeth on the corresponding side, along with several pieces of the upper jaw. The wound bled considerably, but no bad symptoms followed.

At the *Georgetown Hospital,* under the charge of Dr. Gaenslen, of the army, and of his assistants, Dr. Frantz and Dr. Ingram, the following cases presented features of peculiar interest. At the time of our visit it contained one hundred and twelve patients laboring under gunshot wounds.

1. W. S. Rouse, aged 21, 2d Wisconsin Regiment, was wounded in the buttocks, the ball, a round one, weighing one ounce, entering on the left side, just behind the great trochanter, passing completely across, and then entering the opposite one, in the outside of which it was arrested just below the skin, from which it was removed by Dr. Frantz. The track made by the missile was long and deep, extending through the very thickness of the gluteal muscles. Of the three openings, one, namely, that of the first entrance, was round, the

other two being somewhat slit-like. The patient had lost hardly any blood, and was rapidly recovering from the effects of his injury.

2. C. C. Dow, aged 25, 2d Wisconsin, shot through the neck on the right side, the ball entering just behind the sterno-mastoid muscle, two inches below the mastoid process, and emerging at the mouth, injuring, in its passage, the tongue on the right side, and knocking out the left inferior lateral incisors and also the corresponding teeth of the upper jaw. The parts bled considerably for some time after the accident, but, with this exception, and some difficulty of deglutition, no other inconvenience was experienced.

3. George Bugby, aged 25, 15th Connecticut Regiment, shot on the 16th of June, at Vienna, the ball entering the shoulder-joint in front and emerging behind, cutting off the head of the humerus at the anatomical neck, and shattering the bone for an inch lower down. Resection was performed three weeks after the receipt of the injury, two inches and a half of the bone being removed. The glenoid cavity was found to be sound. The man seemed to be doing well for a week, when secondary hemorrhage took place, and, recurring several times, caused excessive prostration, with a probability of a fatal result.

Since writing the above, Dr. Frantz, in a letter, dated August 17th, has informed us that Bugby has not had any further hemorrhage, and that he is regarded as out of danger.

4. Stephen P. Russell, aged 23, 2d Michigan Regiment, accidently wounded on the 15th of July, by a pistol shot, the ball passing in at the lower part of the sternum, just above the ensiform cartilage, a little to the left of the middle line. He was sitting, when shot, against a tree, the man who wounded him standing up. Very little bleeding followed the injury, but severe pain was at once felt, radiating toward the left shoulder and through the abdomen, and for the first four days there was difficulty in voiding the urine. Pretty active peritonitis supervened, lasting for the better part of a week, and thus rendering it extremely probable that the ball, apparently a small round one, had passed somewhere into the abdomen, although its precise route and destination could not be ascertained. The man on the 26th of July was rapidly convalescing.

5. Willliam Judkins, aged 38, 3d Maine Regiment, was injured in the left thigh by the explosion of his musket, inflicting a frightful muscular wound at least ten inches in length by four in width. The accident happened on the 21st of July, and when we saw him on the 26th, the parts had a dark, unhealthy appearance, with marks of erysipelas in the skin, but no signs of suppuration. There was no excitement in the pulse, but the man looked badly and was occasionally flighty. He expired two days after our visit.

6. James McIntyre, aged 35, 2d Wisconsin Regiment, was shot, on the 21st July, in the left arm, near the centre of the deltoid muscle, the limb being raised at the time. The ball, a large conical one, passed through the lungs, and lodged behind, on the right side, below the level of the scapula, and a short distance from the spine, making a track at least eighteen inches in length. It was cut out on the same day. The man immediately spat and coughed up blood, and continued to do so for some time after the receipt of the injury. The left lung was invaded with emphysema, the respiration was hurried and painful, and there was dullness on percussion of the chest.

In a short time the emphysema extended over all the left side and back, and the man became feverish. Notwithstanding this, however, he walked a distance of twenty-two miles after he was shot. When we saw him last, five days after the accident, he was in an excellent condition, and in a fair way of recovery.

7. Jesse W. Burgess, aged 25, 1st Connecticut Regiment, was struck on the left forearm with a conical ball which, passing obliquely in front of the elbow, without opening the joint, emerged a short distance above, and then penetrated his vest, burying itself in his watch, a strong silver one, the case of which was completely indented by it. The ball itself was much flattened and very irregular. Except knocking his breath out of him, as he expressed it, and causing a good deal of pain in the side for a few days, Burgess experienced no particular inconvenience from his mishap. The skin was hardly visibly bruised. He left Georgetown on the 29th of July, calling, at the kind request of Dr. Frantz, at our office the next morning on his way home.

At the *Seminary Hospital*, Georgetown, under the supervision of Dr. Joseph K. Smith, of the army, the only case, out of upwards of seventy, of special interest to us, was that of Thomas Thompson, aged 22, of the New York Regiment of Fire Zouaves. His forearm had been struck by a round ball, which entered in front of the limb, about four inches above the wrist, and, passing round the radius, lodged under the skin of the dorsum of the hand, without fracturing any of the bones.

At Washington City we visited the three hospitals opened there for the accommodation and treatment of the wounded. At the *Columbian Hospital*, under the charge of Dr. Abadee, and his assistants, Drs. Asch, Brainard, and Knickerbocker, the number of surgical cases from the battle-field was under twenty, and, excepting a single one, without any special interest. The case to which we allude was that of a young man who had been struck on the abdomen, nearly midway between the umbilicus and pubic symphysis, by a small ball which buried itself internally, but no one could tell precisely where. From the fact, however, that there was for a number of days a considerable degree of tenderness in the left iliac region, with some evidences of peritonitis, the supposition was that the missile had lodged in the iliac bone. The man was doing well when we saw him some days after the accident. He had not had any difficulty in his bladder.

At the *C Street Hospital* the number of wounded from gunshot was about forty. Through the kindness of Dr. Getty, of the army, and of his assistants, two cases of great interest were pointed out to us here.

1. Sergeant Johnson, aged 30, of Rickett's Battery, was struck *en ricochet* on the right arm by a twelve-pound shot which broke the humerus at three different places, within a few inches of each other, without lacerating the skin, or even causing any considerable ecchymosis. He was doing well.

2. Philip Kernan, aged 25, 5th Artillery, was accidently shot on the 26th of July, with a horse-pistol, in the back, the ball entering on the right side, near the posterior border of the scapula, passing across the superior part of the chest, and emerging on the left side of the neck, just below the

cricoid cartilage, laying open the trachea, as was shown by the fact that air issued at both orifices. The left side of the chest and trunk was emphysematous, and there was occasionally a little cough of bloody froth and mucus. No hemorrhage occurred, but the shock was very severe, although the reaction was complete in an hour and a half after the receipt of the injury. Twenty-four hours after the accident all the symptoms were favorable.

At the *Washington Infirmary*, formerly under the control of the medical faculty of Washington College, but now in charge of Dr. White, of the army, and of his assistants, Dr. Butler and Dr. Gouley, upwards of fifty cases of gunshot wounds had been admitted at the time of our visit. Two cases in particular attracted our attention here, and are worthy of being noticed.

1. A young German, about 22 years of age, had received a wound in the shoulder-joint, the ball passing, if we mistake not, obliquely from before backward, laying open the articulation, and inflicting serious mischief upon the head and neck of the humerus. Two days after the accident an exploratory incision was made, with a view of ascertaining the extent of the injury, and the necessity or non-necessity of resection. The mischief appearing comparatively slight, the operator contented himself with the removal of a few small splinters of bone, trusting that, as the patient was a stout, robust, temperate man, he would be able to surmount all obstacles to a cure. In a short time, however, the parts began to swell enormously, and upon cutting again into them it was found that the injury had been far more extensive than had at first been supposed. Amputation was accordingly performed at the shoulder, with what result we do not know.

2. The other case in this hospital that interested us very much was that of Colonel Farnham, of the New York Zouaves, who was struck on the head at Bull Run, on the 21st July, the ball glancing and slightly bruising the scalp. We saw him on the 25th; he was lying upon his bed, holding a book in his hand, and interested in what he was reading. He was disposed to converse, was free from pain and fever, and was not supposed by any one to be in danger. Subsequently to this, however, he was seized with head symptoms; he became excessively restless, complained of severe cephalalgia, and was finally seized with delirium. After lingering in this way, he expired on the 14th of August, a little upwards of three weeks after the receipt of his apparently trifling injury.

No one in visiting these institutions could fail to be struck with the monotonous nature of their cases of gunshot injuries. With few exceptions, the wounds were situated in the extremities, and, apparently, with nearly equal frequency in the upper and lower. One man, for example, was shot in the finger, thumb, or hand; another in the forearm, wrist, or elbow; a third in the arm or shoulder; and so in regard to the foot, leg, and thigh. Of the numerous cases, amounting altogether to nearly four hundred, not a solitary one was shot in the head and spine; only two in the chest and abdomen, and none in the pelvis. No large vessels seemed to have been laid open in any; very few had broken bones; two had been shot through the shoulder-joint. From all this it is evident that those most severely wounded had been left upon the field of battle. From a careful examination of the cases our conviction was that nearly all — certainly ninety-five per cent. — would recover. During our last visit to them they were, with five or six exceptions, in the best possible condition for a speedy convalescence. Erysipelas, it is true, was just beginning to make its appearance in some of the wards, both at Alexandria, Washington, and Georgetown, but did not spread to any extent or exhibit any virulence.

The treatment in all the hospitals was a pretty full diet with rest and occasionally a mild purgative, and cold water as the local application. So universally was this remedy employed, and such were its happy effects, that it would have done the spirit of old Biondo good to witness it, to say nothing of Kern, Larrey, Hennen, Guthrie, and other great military surgeons. Under this treatment very few of the patients had any fever, and very few of the wounds any disposition to suppurate. Indeed, in many there was no discharge of pus at all.

We felt much interested in inquiring into the amount of pain experienced by some of the patients at the moment they were shot, and were not surprised at their answers. Most of them stated that the passage of the ball produced merely a slight burning or smarting sensation; some few felt pretty severe pain, while others did not suffer any at all. In some cases there was a consciousness, at the moment, of a certain degree of numbness or weight in the part or for some distance around and beyond.

The hemorrhage was for the most part very slight, and but few of the cases suffered much from shock. What was remarkable, many of the men, even of those who were pretty severely wounded in the thigh and leg, walked —shall I say ran?—all the way from Bull Run to Alexandria and Washington. We have already given the particulars of the case of a man shot through the lungs who walked twenty miles after he was wounded, and that apparently without being the worse for it.

With regard to the openings of entrance and exit, the differences were usually well marked and unmistakable. There was only now and then an instance of doubt or uncertainty, requiring a careful examination in order to determine the point. In general, the orifice of entrance was round and well defined, with or without slight inversion of its edges, and occasionally a little discoloration of the neighboring surface from the effects of the powder on the ball. The opening of exit, on the contrary, presented more the characteristics of a slit or rent, with a certain degree of eversion or prominence, and without any blacking of the skin. These phenomena were present, as a general rule, whether the wound was caused by the round or the conical ball. The orifice of egress, however, was usually disproportionably greater, as well as more irregular, in the latter case than in the former. When the wound was subcutaneous, or chiefly so, we noticed that this opening was sometimes of enormous dimensions, and at the same time remarkably ragged, as if the parts had been roughly lacerated.

During the healing process we noticed that the parts around the orifice of exit were generally less inflamed than around the orifice of entrance, which were occasionally in a slightly sloughing condition. In none of the cases, however, that fell under our observation was there anything like extensive mortification.

It is well known that terrible and even fatal injury is not unfrequently inflicted by partially spent cannon shot coming in contact with the surface, extensively lacerating the soft parts and comminuting the bones, if not actually pulpefying these structures, and yet not perhaps even bruising the skin, much less tearing it. These effects were formerly ascribed to what was called the windage of a ball, or the forcible concussion of the air. A case bearing upon this point occurred at the battle of Bull Run, in a man of the name of Cornelius Laroe, aged 41, of the 2d Wisconsin Regiment, an inmate of the hospital at Alexandria. His cap was knocked off by the ball, which he heard whistling as it passed his ear. He was instantly seized with deafness on the corresponding side, along with a sense of weight in the head. The shock strongly convulsed his whole frame, but, regaining his equilibrium, he continued at his post until after the engagement, suffering, however, very severely with pain. When he was admitted, the cheek was swollen and slightly discolored, and so much inflammation afterward arose as to make it difficult to prevent gangrene.

In concluding this brief notice of a visit which, to us, was full of instruction, we tender our very cordial acknowledgments to the chiefs and their assistants of the different hospitals alluded to, for the courtesy they extended to us in promoting the object of our inquiries. Our solicitude to see the sufferers at Bull Run, and to examine their cases while their wounds were still fresh, was very great—not as a matter of idle curiosity but of scientific study—and we assure these gentlemen we shall never forget their kindness. We were greatly surprised not to see any more interest manifested in the subject by other surgeons. With the exception of Professor Blackman, of Cincinnati, and Dr. Newell, of New Jersey, we observed not a single prominent member of the profession during our hospital tour.

BRIGADE SURGEONS.—The following gentlemen have been appointed Brigade Surgeons in the Volunteer Service of the United States, their commissions dating from the 3d of August:—

Maine: Daniel McRuer. Massachusetts: George H. Lyman, Henry Bryant, Luther V. Bell, Peter Pineo, O. Martin. Connecticut: P. W. Ellsworth. New York: F. H. Hamilton, Henry S. Hewitt, John A. Lydell, John C. Dalton, Jr., George Suckley, A. H. Hoff, W. H. Church, Rufus H. Gilbert, Charles McMillan, T. Rush Spencer. New Jersey: J. E. Quidor. Pennsylvania: J. H. Brinton, S. W. Gross, A. B. Campbell, N. R. Derby, A. E. Stocker, J. Owen, James King. District of Columbia: J. G. F. Holston, William E. Walters. Ohio: Charles O'Leary, J. D. Robinson, William Glendennin, George G. Shumard. Indiana: J. S. Bobbs, William B. Stewarts, W. C. Thompson. Illinois: David Prince, Joseph W. Freer, J. V. Z. Blaney, Thomas Sim, J. H. Banch, S. R. Haven.

PENNSYLVANIA MEDICAL COLLEGE.—The faculty of this institution have resigned in a body, owing to an unwillingness on the part of the Trustees to reduce their rent, in view of the hard times.

CLIFTON HALL.—A number of physicians of Philadelphia, by invitation of Dr. Given, visited the private lunatic asylum of this gentleman, at Clifton Hall, Media, in this State, on the 13th ultimo; and, after a careful inspection of its wards and grounds, adopted a series of resolutions highly complimentary to the character of the establishment, the manner in which it is conducted, and its eligibility as a place of resort for the insane. We regret that want of space prevents the insertion of the resolutions.

U. S. SANITARY COMMISSION.—Drs. G. B. Wood, S. D. Gross, Robley Dunglison, and Wilson Jewell have been appointed associate members of this body from Philadelphia.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.—A kind friend in London has sent us the annual announcement of this school for 1861–2, from which we learn that it is in a highly flourishing condition, as might, indeed, be supposed it would be, when we look at the imposing array of names composing its faculty and the advantages afforded by St. Mary's Hospital as a field for clinical instruction. Many of the teachers are writers of eminence, well known to the profession of this country. The branches of study are clinical medicine and surgery, medicine and surgery, physiology, anatomy, operations on the dead body, dissections, chemistry, materia medica, botany, midwifery, ophthalmic surgery, aural surgery, dental surgery, medical jurisprudence, comparative anatomy, and natural philosophy. The faculty consists of Messrs. Alderson, Chambers, Sibson, Coulson, Lane, Ure, Gascoyen, James Lane, Spencer Smith, Broadbent, Haynes Walton, Field, Sircombe, Norton, Sieveking, Hewitt, Tyler Smith, Dresser, Sanderson, Smalley, White, Cooper, and Toynbee.

The school has two sessions, a winter and a summer. The former commences on the 1st of October, and terminates on the 31st of March; the latter on the 1st of May and the 31st of July. The post-mortem examinations are performed by the curator of the museum, the number of bodies annually inspected being nearly 200. Clinical teaching occupies a prominent rank in the curriculum of studies.

BLEEDING IN ITALY.—A correspondent of the *Medical Times and Gazette*, speaking of the medical practice in Italy, states that the use of the lancet in that country is as general as the use of castor oil or tamarind water. Both the physicians and the people are agreed upon the necessity of bleeding, not only as an antiphlogistic remedy, but as a hygienic measure, as something good in itself. A practice very similar to this prevailed, not more than twenty-five years ago, in many parts of Pennsylvania, especially among the German population. People insisted upon being bled at least twice a year, that is, in the spring and autumn, believing that the operation exercised a depuratory influence upon the system. Now no one uses the lancet, either as a preventive or as a curative of disease. Brùnonianism and Toddism are rampant.

DR. POWER, OF DUBLIN.—Dr. John Hatch Power, an able surgeon and writer, was recently elected Professor of Surgery to the Royal College of Surgeons in Ireland, in the room of the late Dr. Porter.

THE GREAT INTERNATIONAL EXHIBITION OF 1862.—The Queen has appointed the following gentlemen to act as members of a committee on surgical instruments and appliances for the approaching Exhibition: William Lawrence, Joseph Henry Green, Moncrieff Arnott, John F. South, Cæsar H. Hawkins, James Luke, F. Seymour Huden, and James Paget.

These gentlemen all know what a good knife is, and how to wield it upon the living subject.

NATIONAL DENTAL HOSPITAL.—A national dental hospital was recently established in the British metropolis, for the benefit of the poor suffering from diseases of the teeth, gums, and jaws. Dr. Pavy, of Guy's Hospital, and Dr. Richardson, were appointed consulting physicians; Mr. Erichsen and Mr. Spencer Wells, consulting surgeons; and Messrs. Wait, Merryweather, and Robinson, consulting dentists.

DANGEROUS COSMETICS.—At a recent sitting of the French Academy of Medicine, Dr. Réveil read a paper "On the Necessity of Preventing Perfumers from Selling Poisonous or Dangerous Articles," which should be exclusively left to the responsibility of regular chemists, and not sold without a physician's prescription. "To show the danger there is in allowing the unchecked sale of certain compounds," he said, "I need but state that arsenic, the acid nitrate of mercury, tartar emetic, cantharides, colchicum, and potassa caustica form part of their ingredients. The kind of soap called lettuce soap, which is sold with the announcement that it has been acknowledged by the Academy, does not contain the slightest trace of lettuce. This and other soaps are all colored green by the sesquioxide of chromium, or of a rose color by the bisulphuret of mercury, known as vermilion. Some which are cheaper contain 30 per cent. of insoluble matter, such as lime or plaster, while others contain animal nitrogenous matter which, having escaped the process of saponification, emits a bad smell when its solution is left exposed to the air. The various toilet vinegars are so far noxious that, being applied to the skin still impregnated with soap and water, they give rise to a decomposition, in consequence of which the fatty acids of soaps, being insoluble in water, are not removed by washing, become rancid, and cause a chronic inflammation of the skin. The preparations employed for hair-dye under the pompous names of 'African water,' 'Florida water,' etc., all contain nitrate of silver, sulphur, oxide and acetate of lead, sulphate of copper, and other noxious substances. All cosmetics for removing hair or freckles are dangerous; the *lait antéphélique*, for instance, contains corrosive sublimate and oxide of lead. Were a chemist to deliver such remedy to a customer without a regular prescription, he would be liable to a fine of 6000f." Dr. Réveil concluded by expressing his regret that certain physicians should so far forget their own dignity as to lend the support of their names to such noxious inventions.—*Galignani's Messenger.*

IRISH MEDICAL ASSOCIATION.—The annual meeting of this Association was held in the Royal College of Surgeons in Ireland, on Monday, the 3d of June. The chair was taken by Dr. Mackesy, of Waterford. The Report referred to the part taken by the Association in reference to the Bill for the Amendment of the Poor-law and Medical Charities Act, and for the registration of births, deaths, and marriages in Ireland. Early in October a subcommittee was appointed to make preparations for the approaching session of Parliament. The committee, after giving much time and labor to these subjects, prepared their report, the substance of which was: That the

Poor-law inquiries into charges against medical officers are investigated and conducted in a manner contrary to the spirit of the British Constitution; that the exclusion of the cases of injury and sickness from the Poor-house Hospital is oppressive to the poor and embarrassing to the medical officers; that the law and orders regulating vaccination are unsatisfactory and inefficient, and the remuneration quite inadequate to the importance of the duty performed; that the salaries of the medical officers are generally insufficient and disproportioned to the duties required of them; that a provision for granting pensions or superannuation allowances to medical officers is urgently needed and called for; and, finally, that the proportion of medical Inspectors to the Poor-law Inspectors should be rather increased than diminished, as proposed by the Poor-law Commissioners. Allusion was made to the refusal of the latter functionaries to sanction the increase voted by the Board of Guardians of the Abbeyleix Union, by a large majority, of the salaries of all their medical officers to £100 per annum, and to similar interference in other instances. Lastly, the deep regret of the Association was expressed for the severe losses it had sustained in the removal, by death, of some of its most distinguished members: Professor Porter, Drs. Robert C. Williams, Roe, Colvan, and Gore. Dr. Beatty was elected President for the ensuing year; Dr. Darby, Chairman of Council, and the Council was re-elected.—*Medical Times and Gazette.*

CLIMATE OF EGYPT.—Upper Egypt is just now attracting a good deal of attention as a resort for invalids. Dr. Uhle, of the University of Jena, recently published a small *brochure* upon the subject, in which he states that the atmosphere is extremely pure, dry, and exhilarating. The heat of the air never falls at noon below 54·5° of Fahr., and never rises above 86°. The weather is generally fair and cloudless, and there is hardly a day in the winter in which the patient cannot take out-of-door exercise.

NECROLOGICAL NOTICES.

The medical profession of Indiana has just sustained a most serious loss in the death of DR. CHARLES PARRY, who expired a few days ago at his residence at Indianapolis. He was a graduate of the Jefferson Medical College of this city, and was widely known as a practitioner of medicine and surgery. He was a man of strong intellect and of excellent moral character. Dr. Parry contributed several valuable papers to the periodical press, distinguished by much vigor of thought, good taste, and admirable practical sense.

MR. HENRY GRAY, so well known in this country by his excellent work on anatomy, died in London on the 12th of June, at the early age of thirty four. At the time of his death he was lecturer on anatomy at, and surgeon to, St. George's Hospital. The loss of so valuable a man must be deeply deplored by the profession everywhere.

The celebrated ophthalmologist, VON AMMON, Physician to the King of Saxony, recently died at Dresden, at an advanced age.

DR. ROBERT FRORIEP, one of the most distinguished surgeons of Europe, formerly a professor at Jena and Berlin, lately died at Wiemar, of congestion of the brain. His surgical writings established for him, years ago, a world-wide reputation.

Bi-Monthly Bibliographical Record.

AMERICAN.

The Pathology and Treatment of Venereal Diseases; including the results of recent investigations upon the subject. By Freeman J. Bumstead, M.D. With illustrations on wood. 8vo., pp. 686. Philadelphia: Blanchard & Lea, 1861.

A Treatise on Diseases of the Joints. By Richard Barwell, F.R.S.C. Illustrated by engravings on wood. 8vo., pp. 463. Philadelphia: Blanchard & Lea, 1861.

A Practical Treatise on the Diseases of the Sexual Organs of Women. By T. M. von Scanzoni. Translated from the French of H. Dor and A. Socien, by A. K. Gardner, M.D. 8vo., pp. 669. New York, 1861.

FOREIGN.

A Manual of Botany; including the Structure, Classification, Properties, and Uses of Plants. By R. Bentley, F.L.S., etc. pp. 811. London, 1861.

On Epilepsy and Epileptiform Seizures; their Causes, Pathology, and Treatment. By E. H. Sieveking, M.D., etc. pp. 336. Second edition, revised and enlarged. London, 1861.

Epileptic and other Convulsive Affections of the Nervous System; their Pathology and Treatment. By C. B. Radcliffe, M.D., etc. pp. 312. Third edition. London, 1861.

Lectures on the Diseases of the Kidney, generally known as "Bright's Disease," and Dropsy. By S. J. Goodfellow, M.D., etc. pp. 306. London, 1861.

Traité Clinique et Pratique des Fractures chez les Enfants. Par Dr. A. Coulon. Revu et précédé d'une Préface par Dr. Marjolin. pp. 264. Paris, 1861.

Traité Pratique de la Pustule Maligne et de l'Œdème Malin, ou des deux formes du Charbon Externe chez l'Homme. Par J. Bourgeois, etc. pp. 316. Paris, 1861.

Die Volkskrankheiten in ihrer Abhängigkeit von den Witterungs-verhältnissen. Von Dr. K. Haller. Wien, 1860.

Ergebnisse und Studien aus der Medicinischen Klinik zu Bonn. Von Dr. M. E. A. Naumann. Band ii. pp. 645. Leipzig, 1860.

On the Relative Influence of Nature and Art in the Cure of Syphilis. By T. Weeden Cooke. pp. 64. London, 1861.

The Physical Examination of the Chest in Pulmonary Consumption and its intercurrent Diseases. By Somerville Scott Alison, M.D., Edinburgh, F.R.C.P., etc. pp. 447. London, 1861.

Clinique Médicale de l'Hôtel-Dieu de Paris. Par A. Trousseau, etc. Tome Premier. pp. 772. 1861.

Why the Shoe Pinches; a Contribution to Applied Anatomy. By Hermann Meyer, M.D., Professor of Anatomy, Zurich. Translated by J. S. Craig, L.R.C.P.E. pp. 55. Edinburgh.

Méthode Pratique du Laryngoscope. Par le Docteur L. Türck, of Vienna. pp. 124. Edition Française. 1861.

The Modern Pathology and Treatment of Venereal Diseases. By P. H. Watson, M.D., F.R.C.S. pp. 39. Edinburgh and London, 1861.

Obstetric Aphorisms, for the Use of Students commencing Midwifery Practice. By J. G. Swayne, M.D., etc. pp. 130. Second edition. London, 1861.

Ready Rules for Operations in Surgery. By A. Webb, M.D., Surgeon-Superintendent to Native Hospital, Calcutta. pp. 98. London.

The Autobiography and Services of Sir James McGrigor, Bart., late Director-General of the Army Medical Department. With an Appendix of Notes and General Correspondence. pp. 418. London, 1861.

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MEDICO-CHIRURGICAL REVIEW.

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Analytical and Critical Reviews.

Art. I.—*Traité d'Hygiène Therapeutique, ou Application des Moyens de l'Hygiène au Traitement des Maladies.* Par F. Ribes, Professeur d'Hygiène à la Faculté de Médecine de Montpelier, etc., etc. Paris: J. B. Baillière et Fils. 8vo., pp. 828.

A Treatise on Therapeutical Hygiene, or the Application of the Means furnished by Hygiene to the Treatment of Diseases. By F. Ribes, etc., etc.

Hygiene was the companion, if not the precursor, of ancient Greek medicine, and its importance in this connection was admitted by the most distinguished Roman physicians. During the long period of intellectual darkness which followed the downfall of Rome and that of the scholastic subtleties and jargon which succeeded this latter in its turn, hygiene was neglected alike in the usages of ordinary life and in theoretical teaching. When, eventually, it found a place in the didactic courses of the medical schools of the last century, it remained, in a great degree, isolated and barren, or, at most, was made up of a series of commonplaces, which were inefficient either for the preservation of health or the cure of disease. By a large majority of English and American physicians hygiene had come to be regarded as a subject of pure lore, which one might occasionally discuss in a spirit of curiosity, but ignorance of which was not discreditable, on the score either of learning or of practical knowledge. It is within the present half century since the writer of these remarks acquired among the students of medicine to whom he had begun to lecture, the soubriquet of "hygiene," so little, if at all, had they heard of the subject, or of its being available, in their future professional career, for the successful treatment of their patients.

The daily impediments to the cure of diseases, owing to the ignorance and consequent neglect of the principles of hygiene, ought, one might suppose, to have prevented the attention of the commonest observer from being ever dormant on agencies constantly operative. But men continued, notwithstanding, to be somnolent, or to look with stupid indifference on all the physical evils with which they were surrounded, so far as health alone was concerned. When ameliorations and improvements were made, it was to gratify the senses in the vanity of show and of luxury. Habit, indolence, a secret belief in fatalism, while, perhaps, openly disavowing it, cupidity, which grudges a present outlay when health, not market profit, is the only promised return—all these causes kept hygiene in abeyance.

Commerce and manufactures, by accumulating large populations in limited and confined spaces, and placing men in new and often unhealthy relations with things around them, at last awakened a certain number of outside observers, more indeed than those actually engaged in these pursuits, to a perception of the heavy tax in disease and shortened duration of life paid for carrying them on. Modern wars also, by bringing together large masses of men under new and peculiar circumstances of location, atmospherical exposures, and bad or defective nutriment, and close lodgings, furnished opportunities for the study of hygiene, which could not be overlooked, although they were seldom turned to full account by medical men connected with the army and navy. Of late years, however, precious documents have been prepared by these parties, full of instruction, albeit of a melancholy kind, since they reveal the inaptness and obstinate adherence to old prejudices and semi-barbarous usages of those in power, who have had control of armies and fleets.

If the interest felt in a subject bears any definite proportion to its importance, then ought hygiene, which includes the questions of life, health, and longevity, to command unceasing attention. Looking at the comparative influence, constant operation, and abiding effects of hygienic agents on the one hand, and the restricted and occasional employment of those purely medicinal or pharmacological on the other, the first might be supposed to be the subject of hourly meditation and study by every intelligent human being; while the second, as only of occasional use and adaptation, would enlist for their investigation the minds of a limited number of persons. But, in fact, the proportions in the two cases are reversed, for while there is a limited class, called doctors, who make the operation of drugs and the cure of disease their special study, yet everybody has a medical dogma, talks more or less of disease, and of some favorite remedy for its cure. On the other hand, health and the means of preserving of it are treated, when thought of at all, as a secondary matter, the inquiries into which are made by a small number, whose teachings are coldly listened to. This must seem the more strange when we reflect that health, to a certain extent an original gift, can only be preserved, or, if temporarily lost, can only be regained by obedience to the laws of hygiene. Is the digestion to be improved, new and better blood to be elaborated, fresh tone to be imparted to the nervous system, and the muscular tone to be developed and strengthened, we seek for the means of obtaining these desirable results by bringing the functions into harmonious relations with the several hygienic exciters, by which they are habitually stimulated and nourished, viz., food, air, exercise, bathing, due division of the hours of waking and sleep, grateful appeals to the senses, and proper exercise of the mental faculties. Would we alter the diathesis or constitutional predispositions to certain diseases, such as the scrofulous and the scorbutic, it would be worse than time lost to seek for the means of doing so in the use of drugs, or of medicines properly so called. Equally futile would be the attempt, when the diathesis has been converted into actual disease, to cure scrofula and scurvy by remedies derived from the shop. The causes of the disease, in either case, consist in a withholding of certain necessary hygienic agents —pure and dry air, wholesome food, made up in due proportion of animal and vegetable substances, and pure water for drink: the cure will be brought about by a regular and persistent use of these several agents. Who but the veriest dreamer looks for the prevention and cure of pulmonary consumption by medicine? Who does not rest his hopes solely on judicious hygienic treatment, which includes change of climate, travel, active locomotion, food, and appliances to the skin, by proper clothing, frictions, and bathing? If we put aside the sophistries suggested by perverted appetite and long habit, we must see that there is no correction of the gouty and rheumatic diathesis, or radical cure of gout and rheumatism by medical treatment alone, whether attempted by the use of so-called specifics, or carried on after the most approved practice of the schools. Our reliance must be on the methodical and persistent use of a suitable regimen in its most comprehensive sense. Even in febrile diseases, as those of the eruptive class, which are produced by the introduction into the organism of a specific poison, we are beginning to realize the fact that less is to be expected from medicines than from hygienic means—fresh air of a regulated temperature, large dilution, by cool drinks, and ablution or bathing in water of a temperature dependent on that of the skin; the more elevated the latter the cooler the former. We have no better means than these for eliminating the poison by the various secretions, and of moderating the violence of its action on the organs. The promises of chemistry, as a therapeutical guide, so far have not been realized.

In our preceding remarks we have looked at the subject in a synthetical point of view, and at the results of hygienic agents in the aggregate. An analytical inquiry into the operations and effects of each separate agent on the organism, will be found in the work the title of which heads this paper. The investigations of M. Ribes might have been more searching and connected with a larger amount of historical experience than he has thought proper to introduce; but, viewed as a whole, this treatise on therapeutical hygiene is a valuable contribution to a study which, notwithstanding its antiquity, has scarcely acquired a regular shape or well-defined outlines. The author begins by speaking of the nature of therapeutics—the indications, methods, means, and direction. "The means which tend to cure are, first, actions of the animal economy which are endowed with a conservative and medicating power; secondly, hygienic agents; thirdly, pharmacological agents; fourthly, surgical agents." That part of the practice of medicine which is here called *therapeutical hygiene* was designated by the old writers under the name of *dietetics*, but as this latter term is restricted now to that which relates to alimentary regimen, the former, as more comprehensive in its meaning, would seem to be entitled to the preference.

Under the head of "therapeutical means," we are told that

> "From the time of Hippocrates, even from that of the Pythagoreans down to Galen, they constituted the chief part of the resources of practical medicine. The Greek school placed their incomparable value in the clearest light. Hippocrates especially attached more importance to dietetics than to medicines, of which latter he made a very measured use. Many physicians before his time only employed these latter externally. At a subsequent day Celsus and Galen laid down rules of regimen which might suffice even now for the guidance of physicians in the larger number of cases."

Hygienic agents, by their abrupt or excessively prolonged action, are frequently predisposing causes of disease, and yet, if wisely modified in their application, they will produce a change both positive and permanent in one or more functions, and bring back the entire economy to its physiological or normal rhythm. The reaction against ancient medicine, brought about by Paracelsus and his followers, the readiness to believe in the promises of empirics, the progress of natural history and of materia medica, opened a wide field for the trial of new substances, and caused nature to yield her supremacy to art. A preference was given for the means which were capable of acting powerfully and promptly. It took a long time to discover, and still longer to make the acknowledgment, that confident promises were often illusory, and that great vogue ended in discredit. Undoubted success in some instances, and valuable discoveries, led to a blind trust in active medication. But all this did not justify the putting aside olden experience, and the simple, wise, and prudent practice which confided in the powers of the animal economy and of therapeutical hygiene.

It is well for us to bear in mind, however, that, at all times, great practitioners of medicine paid special attention to therapeutical hygiene, and knew how to turn it to rational account. Ambrose Paré, the father of French surgery, used to say that it was better to come out of disease by the aid of a good regimen than by medicines, which are disagreeable to take, hard to retain, and painful in their operation. Diet and quiet have often performed wonders, both in warding off the imminent attack of virulent disease, and, in other cases, in curing it after it has come on.

The means of acting on a morbid state of the organism and bringing about in it the desired changes, are—1. Through the functions of nutritive life, and especially the digestive, the respiratory, the excretory, and the secretory functions. 2. By means derived from the affective or moral functions. 3. By those from the intellectual life. 4. By those drawn from the physical life, or that of action.

The first division opens with the subject of "Alimentation in general." The effects obtained by the aid of alimentary regimen depend, on the one hand, on the quantity of the nutritive substance, its nature, and that of the condiments with which it may be seasoned and the processes to which it is subjected; on the other hand, to the temperament, constitution, habits, and age of the patient. The effects of the food taken will, also, be modified by the nature of the disease. An inquiry into all these points becomes the more important from the fact that death is often caused by errors in regimen. Among the greatest obstacles in carrying out a dietetic system, are the capricious appetites and tastes of the invalid, and the mischievous, although well meant, recommendation of his friends, concessions to which are too readily made by the physician.

Abstinence, or "a very strict diet," is studied in the next chapter, in reference to its use in acute diseases. A physician of the last century said that he left behind him two excellent doctors—diet and water. Another used to dwell on the skill of Doctors Diet and Quiet. Going back to the fountain head, we might cite the dictum of Hippocrates, that he was the most skillful physician who cured by means of regimen. This acute observer established many degrees in *diet:* from the entire privation of food, or "extreme diet," to the use of food consisting of solid vegetable and animal substances. In acute diseases the recuperative powers of the economy are sufficiently strong to do without aid of an exciting nature, which would increase instead of relieving the existing oppression of the patient. Hunger, says the sage whom we have just quoted, exerts great power: it weakens, it cures, it kills. Without it a great many acute diseases would be necessarily fatal. An abatement of the customary activity of the digestive system is followed by that of the other parts of the organism, which sympathize with and derive their support from it. Both the general and the local irritation are diminished by this means, and the organism supports better the shock of the disease. Fluxions are removed and congestions diminished, for abstinence or a very reduced diet increases interstitial absorption at the same time that it aids the various excretions.

Celsus tells us, that Asclepiades forbade all kinds of nutriment to his patients during the first three days of acute diseases; and, following his example, Themison adopted this practice in the greater number of the diseases which he was called upon to treat. But, as justly remarked by M. Ribes, no rule can be laid down with mathematical precision in these cases; we must look to the different nature and degrees of intensity of constitutional actions. We shall not follow closely the author in his dietetic directions, which are blended with, if not sometimes obscured by, doctrinal views of the older writers. We could wish, also, that he had spoken, more than he has done, from personal observation, and given us the hygienic results in modern clinical practice. He describes strict diet to be that which consists exclusively of drinks and of aliments in a fluid state, easy of absorption, and tasking but moderately the organs of assimilation. It is not only the amount of the matter or of the molecules contained in these substances, but also their nature, which must direct their selection by the physician. The rules for the regulation of this strict diet in acute diseases are subordinate to their *periods* and to their *nature.* The most favorable time in disease for taking food is during the intermission. Another important element in solving this problem is judiciously adverted to by the author. It is the influence of the nervous system or of the feelings and emotions of the patient. The food may be selected with the nicest discrimination and prepared in the most approved manner, and yet, if the patient be exposed to mental irritation or annoyance of any kind, he will suffer from indigestion and increase of his morbid state. The surroundings of the sick person are, therefore, every way important, so as to keep away intruding and unasked-for visitors, and avoid the introduction of disagreeable topics. There is yet another very urgent reason for watchfulness in guarding the patient from harm, committed under the guise, and really with the good intentions, of friendship. Many kind but ignorant souls, both in the house and out of it, who, confounding apparent weakness caused by the first violence of the disease with that from exhaustion growing out of its long duration, imagine that nothing better can be done than to keep up the strength, as they call it, by nourishing food and diffusible stimulants—wine, brandy, etc. We would add, that the patient often labors under similar delusion, and is too ready to take from the offering hand these articles, which are all calculated to aggravate the fever or the inflammation and increase the debility. Were the instinctive cravings of a febrile patient, instead of a false theory, to be the guide, no food would at first be asked for, and cool, acidulous drinks would be alone required. Animals have often a better chance of recovery than human beings, as the former yield to their instincts and do not force themselves to take food, but wait until the natural appetite returns with the abatement or removal of the disease.

In a subsequent article, on the application of the rules of regimen to the treatment of a certain number of internal diseases, we meet with the following paragraph, describing the therapeutical treatment of pneumonia by an eminent teacher and reformer. It will, we are afraid, shock the anti-bleeding and liquor-prescribing creed of certain writers and practitioners of the present day.

> "Among our contemporaries, Broussais is one of those who have turned dietetics to the best account in the phlegmasiæ, both acute and chronic. 'In vain,' said he, 'will you enlist the most appropriate means for removing *inflammation of the lung;* if the regimen does not concur in this end, they will be almost always without effect. While we are protecting the skin against the impression of cold, while we are withholding all mechanical or chemical irritants, and preventing all sensations and acts which might produce excitement, while we are bleeding and giving sedative drinks, and mildly fomenting the skin, or irritating it either to produce rubefaction or phlogosis, or to create a suppurating sore, we must regulate attentively the regimen. The most strict diet ought to be prescribed during the first period of a violent inflammation; but when it becomes chronic, there will be less occasion for restriction. Affections of the lungs may be treated almost exclusively by diet. If the phlogosis is simple, it will suffice to subject the patient to a diet (abstinence) as rigorous as that pursued in the anti-aneurismal treatment of Valsalva. If, at the same time, the other antiphlogistic means are applied with judgment, we shall find in a short time the lung restored to all its functions.'"

We ought to have repeated, after M. Ribes, the directions which he lays down in a preceding page for the administration of demulcent, diluent, and cooling drinks, as constituting the regimen in the first stage of acute disease.

> "Until the date of the resolution of the phlegmasia, the indication is to diminish the exaltation of the morbid state by aqueous, gummy, or mucilaginous drinks, slightly sweetened. These drinks should be given tepid, or even cool, in small quantity at a time, as the irritated stomach is inclined to vomiting. After the demulcent substances come vegetable acids diluted with water and sugar, viz., orangeade, lemonade, currant, or raspberry water. The agreeable sensation of coolness which they procure, and the direct antiphlogistic or temperate operation which they induce, will be followed by excellent effects, if the patient make moderate use of them.

> "This strict diet will be continued so long as the local symptoms and febrile movement are intense and persistent. When they have ceased, recourse will be had to barley, rice, apple or prune water, chicken water or a decoction of veal—substances which are somewhat more nutritive than the preceding. The taste of the patient will be consulted in the choice of these articles."

Melancholy proofs of the necessity of abstinence in acute diseases are too often furnished by the deaths which have followed a neglect or a breach of the rules enjoined in this particular. Instructive remarks are made on the most appropriate regimen at the termination of acute diseases, and in greater detail during convalescence. The completeness of this latter will depend greatly on the choice of aliments. The quantity as well as the nutritious quality of food is to be gradually increased in convalescence, according not only to the appetite, but to the ability and readiness of the stomach to digest it.

In the chapter on dietetics in chronic diseases, we meet with much discriminating advice. "Hippocrates, Celsus, Aretæus, Galen, among the ancients; Sydenham, Baglivi, Tissot, Broussais, among the moderns, have furnished excellent data for the solution of the problem of the application of regimen to chronic diseases." Most practitioners tell us that the functions of the digestive canal are deranged in these cases. Zimmerman advises that we should direct our attention to the state of the stomach and bowels.

> "We must," he says, "restore the digestion if we would succeed in curing lingering diseases. The medicines indicated and properly prescribed will doubtless contribute to the end proposed; but the precautions exacted by the constitution or state of the vital powers, the nature of the disease, and its duration point more to the resources furnished by dietetics than by pharmacy. It is only by a union of the two that the results will be satisfactory. Nothing will be so dangerous as aliments given unseasonably or without precise rules. We frequently see in the course of chronic diseases accidents or complications; vomitings, diarrhœa, dysentery even, dropsies, emaciation, which have no other cause except badly directed alimentation."
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> Looking for the causes of chronic diseases in connection with errors in regimen, we find them designated as follows: "Excess in the use of alcoholic drinks is one of the exciting causes of insanity and other cerebral affections, chronic inflammation of the intestinal canal and liver, and dropsy which follows in their train. Insufficient alimentation or that of a bad quality gives origin to chronic diarrhœa and various asthenic maladies, to scurvy, and intractable intermittent fevers. The exclusive use of farinaceous aliments engenders scrofula and keeps up asthenic diarrhœa.
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> "An altered alimentary substance produces pellagra, and penury favors its effects. It is not the Indian-corn itself, but the grain altered in its character, which causes this disease. This change is owing to the presence of a fungoid parasite, which is frequently met with in northern Italy.

"*Ergot*, an excrescence which is developed on the end of the grain of rye, gives rise to diseases of extreme gravity.

"Hygienic treatment and the chief means of preventing, diminishing, and curing the disease consist in a change in the food."

The great number of disorders seen in prisons is due to the influence of badly directed alimentation, and of the punishments inflicted on the prisoners, which go to diminish the allowance of food already too restricted in quantity.

"The diseases most commonly met with in prisons are the various forms of scrofula and phthisis pulmonalis. It is to be observed at the same time that the antecedents of these diseases consisted in a life of destitution and vice. A third disease is scurvy—the appearance of which is readily explained by the prison food, vitiated air, and want of cleanliness in clothing."

Excessive bodily labor, disproportionate to the strength, is followed by general asthenic diseases, especially noticeable in children who work in factories. Suitable alimentary regimen will fulfill one of the chief indications for the cure of these diseases.

"Finally, the abuse of mental labor, and the bad hygienic course of those who give themselves up to it, is a cause of disorder of the stomach and other abdominal viscera, as well as of the entire economy, which regimen may abate if it does not entirely remove the effects."

Age, hereditariness, and temperament are modifying conditions in carrying out a suitable regimen, which must never be lost sight of. More than all, are the considerations depending upon the *periods of the disease*. On this point we do not find very clear or precise directions laid down by M. Ribes, who every now and then is lost in the abstract vitalism and corresponding terminology with which the school of Montpelier has always been affected.

Alimentary agents, considered in relation to the treatment of chronic diseases, is the subject of the fourth chapter of the first book in the volume before us. Abstinence is first considered. A remark made by Baglivi deserves to be repeated. It is, that persons who were cured of their chronic maladies during Lent, under the influence of fasting and vegetable aliments, suffered from relapses at Easter, when the use of meats was allowed. Chronic engorgements, induration, hypertrophy, organic alterations or degenerations are decidedly benefited by abstinence; so, also, are ulcers with superabundant serous suppuration. Gout has disappeared, and sometimes been entirely removed by the persons subject to this disease having been made prisoners of war and kept on bread and water. But, adds the author, abstinence alone does not ordinarily cure the gout.

Under the title of *cura famis*, or cure by hunger, Galen, and at a later period Valsalva and Callisen, designate a mode of treating certain diseases in which entire abstinence—still proportioned, however, to the state of the patient, who is not to be thrown into utter prostration—constitutes the chief part of the treatment. Récamier made use of it, added to the large use of cicuta, in cancer. He trusted exclusively to these means, whereas Valsalva had recourse, in addition to the *cura famis* for the treatment of aneurism, to free blood-letting. The quantity of food and drink was daily diminished, so that at last only eight ounces of panada made up the morning meal, and half this quantity was given in the evening. So soon as the patient was sufficiently attenuated to the point of his being scarcely able to raise his hand from his bed, to which he had been confined from the beginning, the quantity of food was increased each day in exceedingly minute proportions until he was able to rise. In our own time, Marjolin and Bérard assert, that when false consecutive aneurisms cannot be compressed, and when their situation is such as to render ligation dangerous, recourse may be had to the simultaneous employment of topical refrigerants and the method of Valsalva.

The *Arabic* regimen is described by the author. It consists in a dry diet, which few patients will deserve their name by persisting in. Cases in proof of its efficiency in different diseases are cited by Aristotle and Pliny, and among the moderns by Schenck and Buchan. The latter says that the sick person must abstain from all kinds of drink, especially the aqueous, and be content to restrict himself to dried bread, sea biscuit, meats and jellies, and aromatic and stimulating vegetables. The thirst may be mitigated by a few mouthfuls of whey or Seltzer water, or of wine rendered diuretic. Of late years Dr. C. J. B. Williams recommends the dry regimen in catarrh. He cites his own case in its favor. On an average, forty-eight hours of abstinence from liquids will be quite enough to effect a cure. The period may be shortened by exercise and warm clothing, or by lying warm in bed, or by commencing with a purgative, or by any other dry means of increasing the natural secretions.

Analogous to this kind of regimen is that which consists in the exclusive use of sugar, for this substance is not a constitutive one, or if at all, it is so in but a slight degree, by a little adherent mucilage, which it is the object of refinery to remove. It has no recognized therapeutical action. Garnier, of Guadaloupe, is quoted by Lullier Winslow as having cured many cases of dropsy (the kinds not specified) by the use of sugar, to the exclusion of all other aliments and every kind of medicine. Being himself attacked with hydrothorax, ascites, and general leucophlegmasia, a formidable combination, truly, he made trial of the saccharine treatment, which, after a perseverance of six months, procured a complete recovery. He took, during this time, several pounds of Muscovado sugar daily. M. Andral relates the history of a man fifty years of age, who, after having suffered from obstinate intermittent fever and enlarged spleen, together with progressing dropsy, had recourse to a diet of sugar, of which he took an enormous quantity, and at the same time associated with it a little broth. At the end of three months the dropsy had disappeared and his health was restored. The same author cites the cure of a young woman affected with a chronic disease of the stomach, for which she took a pound of sugar daily, and a cup of cold beef broth; this treatment was continued for a length of time.

M. Chossat, after studying the effects of an exclusively saccharine regimen, found that sometimes it favored the formation of fat, sometimes that of bile; and that its use was attended with constipation in the first case and diarrhœa in the latter. Milk, however, produces analogous effects on the intestinal canal.

The different kinds of alimentary substances are next examined under the several heads of lenitive or assuasive, analeptic, tonic, stimulant, temperant, specific, and special, as acting on a particular organ or apparatus. Under the head of lenitive aliments come garden vegetables, roots, and the muco-saccharine fruits. To these must be added feculent articles—mucilage united to sugar, starch, vegetable jelly, gluten, and even the oil which is in a state of minute subdivision in seeds. This class of aliments is adapted to the first stage of chronic disease following nearly subdued acute inflammation; also to active hemorrhage; to gout brought on by a too succulent food, and by stimulants; to chronic inflammation of the lungs, pleura, stomach, liver and kidneys, the exanthemata, and to chronic dysentery.

Analeptic aliments are those which, while repairing the waste of the organism, are at the same time lenitive. Foremost of this class is milk, which combines in itself the nutritive elements of butter or animal oil, casein, albumen, lactin or the sugar of milk, various salts, and water. Milk has many resemblances to chyle and blood, in its composition and properties, which could not fail to make it interesting *a priori* in a therapeutical point of view. In its alimentary effects it must vary according to the animal from which it is drawn, the habits of this animal, its mode of nourishment, and the proportions of constituent parts of the milk. We regret not being able to follow the author in his observations on the dietetic value and applications of milk, but in the limited space left for us we shall hardly be able to do more than specify the subjects successively treated of in the volume. Milk ranks in the first line, in gastralgia with atony. Ass's milk calms, as we are assured by Barras, the erethism in this case better than any other substance, either alimentary or pharmacological. In diarrhœa and dysentery goat's milk has been greatly praised, in those cases particularly in which there is an absence of gastric distress. Cold milk diluted with water is specially adapted to infantile diarrhœa, when the abdomen becomes suddenly tympanitic. The prompt and entire removal of bowel disease, and wasting away of the flesh in infants prematurely weaned, or when the supply of the mother fails, by putting them to the breast of a healthy nurse, must be known to every practitioner of any experience. The milk regimen is also very serviceable in the first stages of phthisis, constitutional syphilis accompanied with much emaciation, asthenic gout, albuminuria, dropsy, and chronic diseases of the skin accompanied with much irritation. With milk are associated fecula, bread, eggs, etc. Whey is both a drink and a lenitive aliment. It contains sugar, casein, lactic acid, and an animal matter which has been compared to osmazome. Its use is praised by the author in wounds, after surgical operations, acute and chronic ophthalmia, irritation of the generative organs, and the acute forms of syphilis.

Tonic alimentation includes all those meats which contain gelatinous, albuminous, and fibrinous principles in a state of elaboration superior to that in which they exist in fishes, and in animals, which form a part of the lenitive diet. These meats nourish without stimulating, by giving tone, and gradually increasing the strength of the organs.

Stimulating diet consists of a great number of aliments of the preceding group, to which exciting properties are added by the mode of preparation, by seasoning, and by the use of stimulating drinks. Red meats from adult animals, and game, are the basis of this alimentation, which is called for in defective appetite, an asthenic condition of the economy, threatened gangrene, the latter stage of epidemic continued and exanthematous fevers, and in certain forms of scrofula and scurvy. In temporary depression of the vital powers alcoholic liquors have a reviving and reanimating influence. Coffee takes high rank in the list of drinks, food, and condiments which form the stimulating diet. It carries off asthenic, or, as they are often called, nervous headaches, caused by cold and moisture, or by heat and moisture. It restores the sensibility which opium or excessive mental labor have greatly disturbed and obtunded. It is also serviceable in asthma, and in the asphyxia caused by charcoal, and in the nervous stage, or that of invasion of intermittent fever. It is administered on these occasions in a strong decoction, to which is sometimes added lemon-juice. Tardy menstruation in young persons of great susceptibility is also relieved by coffee.

This article has been used under circumstances in which no *a priori* reasoning would have suggested the idea, viz., in strangulated hernia. The author details a case of this nature. Taxis, ice, the internal use of belladonna had been used in vain. It was then that Dr. Durand, an old physician, eighty years of age, having accidentally heard of the case, told of his having seen similar ones treated in Havana, and of having himself treated many others with great success by the following plan: Give every quarter of an hour a cup of strong coffee, warm, and slightly sweetened; the infusion is to be made of about eight ounces of roasted coffee in twelve cups (size not stated) of boiling water. The last four cups are to be taken every half hour, in place of a quarter of an hour. This prescription was closely followed, and at the end of the fifth cup there was gurgling, and after the ninth cup the intestine was returned.

Temperant aliments contain but little nutritive matter, and are very watery; they are consequently distinguished from the other classes in their being directly cooling and antiphlogistic. The principles found in this group are vegetable acids united with jelly, mucilage, gum, fecula, and saccharine matter. A regimen of this nature will diminish the activity of the circulation, and increase the above discharges and the renal and other secretions; and by abating that of the skin it is opposed to plethora. These substances, in the form of drinks, are valuable adjuvants in diseases marked by plethora and phlogistic or bilious irritation—in typhus and yellow fevers, and hemorrhages.

Aliments endowed with specific properties form the next subject of notice. First of these come antiscorbutics, such as water-cress, nasturtium, veronica, radish, parsley, turnips, horse-radish, leeks, onions, garlic, chervil, ginger, celery, sorrel, and acid fruits, and especially lemons, and also raw potatoes; and among the drinks, beer, cider, Seltzer water, etc. Into the composition of most of these articles there enter an acrid essential oil and vegetable acids, united to mucilaginous and feculent principles. Experience shows that by these substances alone scurvy has been often cured. Many of them are used at the same time, and often with meat and wine. Taraxacum has proved to be a good antiscorbutic. Sugar has been given largely with no little success. Alimentary regimen alone, in due method and persevered in, will often suffice for the cure of scorbutic ulcers.

Much interest must be attached to the question, how far a particular organ or apparatus can be directly acted on or specially modified by certain aliments? The laxative operation of some of these substances is a familiar fact; and this knowledge ought to be turned to better account than it has been, in the treatment of constipation, a disorder which proves so often an annoyance and a detriment to many persons. On the other hand, we may avail ourselves of the astringent properties of other articles of food. Are there alimentary substances which act in a special manner on the pulmonary system? is a question asked by the author. The answer is given affirmatively in a qualified sense, but without that minuteness of specification which is so desirable. We may, it seems to us, be very sure that the prevention and cure of phthisis will be found eventually to turn on a suitably-devised alimentary regimen, more even than on the pneumatic trials on which more confidence has hitherto been placed. When we speak of pneumatic trials, we mean not only the inhalation of various gases and vapors, but all the atmospheric influences at work in the changes of season and of climate.

In reference to alimentary matters acting on the brain and nervous system, the author speaks of lettuce, both in its crude state and when cooked, as calming the sensibility and inviting to sleep. More evidently certain is a special action of a different kind produced by coffee on the brain, which it excites in an agreeable manner, with the production of wakefulness and a genial flow of thought. As such, it is adapted to prostrated states of the nervous system and the narcotism produced by opium. We do not dwell now on all the various circumstances under which it is contraindicated, such as a febrile state, nervous excitement, irregular and immoderate action of the heart, inflammatory dyspepsia, cutaneous diseases, etc.

We have not room for more than stating the subject of chapter fifth, in which is made the application of the principles that regulate diet in chronic diseases, specifying, in the first instance, chronic phlegmasiæ, the dermatoses, syphilis, and scrofula. In chronic inflammations of the alimentary canal, M. Herpin, who saw so much of these diseases in Algeria, is quoted as saying that pharmacological agents, though often useful, necessary, and even indispensable, occupy but the second rank. In the selection of alimentary substances, even in the same case, we shall be influenced by the season; lenitives and demulcents being preferred in the spring, and a tonic course in the autumn. In syphilis much of our success will turn on the hygienic treatment, which must be regarded as decidedly active. The author, on this subject as well as on scrofula and the scrofulous diathesis, enters into some minuteness of inquiry. His advice as to the means of checking obesity and removing leanness will interest many of his readers. Would that some of us of the Cassius kind could be changed in this latter particular!

The alimentary regimen in nervous affections is next discussed in an excellent spirit. So also is the following section on the circumstances which relate chiefly to external agents, and to the habits of the parties to whom we offer advice.

The second section, on the regulation of the respiratory functions for therapeutical purposes, opens with a chapter in which the operation of the properties of the atmosphere is investigated, under the respective heads of heat and dryness, heat and moisture, atmospherical vicissitudes, light, and electricity, and is concluded by remarks on the chemical properties of the atmosphere, regarded in a therapeutical point of view. On all these points we meet with much instructive commentary and apposite advice.

Changes of climate and changes of locality are the subjects of the two following chapters. The study of medical geography is enjoined in this connection; it is one in which every practitioner has a direct interest. Daily, at any time, as remarked by M. Boudin, the most retired country physician may be consulted and his opinion asked respecting the best place for a consumptive or a scrofulous patient to take up his abode. Ignorant of medical geography, the oracle thus consulted runs the risk of giving not only a doubtful response like that of Delphi of old, but a positively erroneous one, and sends the patient in a direction the very reverse of that which he ought to take. The prevention, and, in a good measure, the treatment of endemic diseases cannot be satisfactorily indicated without a knowledge of the effects of localities on the health of the inhabitants. A familiar example of this truth is seen in obstinate intermittent fevers, the only means of cure of which consist in travel and a change of locality. But of all diseases, phthisis pulmonalis is the one in which the most numerous trials have been made and the greatest hopes indulged, on the score of change of climate and locality. The author has not gone as fully into this subject as would be justifiable from the details accumulated during the last thirty years, nor has he adverted to the change of opinion which is now taking place respecting the hitherto universally accredited superiority of warm climates for the consumptive. Looking to the fact of perfect assimilation and hematosis being the main functional conditions for the prevention as well as cure of phthisis in its early stages, we cannot deny the superiority of cool and even cold climates for enabling nutrition and its attendant phenomena to be carried on. Just now medical opinion is in a state of transition on this subject. To show how far we are from having collected all the data from which to deduce guiding principles in the therapeutical application of climatic influences, we would mention the fact, that in Iceland, the climate of which is cold, raw, and changeable, and every way ungenial, consumption is a rare disease. This is the more surprising when we add that the compensating benefits of abundant and varied alimentation are wanting to the people of this island.

Travel forms the subject of a chapter which is filled with pertinent remarks. Sea voyages have not engaged the attention of the author. We quote one passage

"Grief, and the concealed annoyances of married and family life, are, more frequently than the world supposes, the chief cause of deeply-seated disorders, at first of a nervous character, or without any appreciable lesion of moment, and afterward becoming more and more organic. The physician will be deceived in the nature of lesions of the heart, for example, if he do not go back to this source. Pharmacological and surgical means are useless, and either aggravate the evil or produce only a transient and deceptive effect. But when traveling is sometimes proposed, the suggestion is eagerly received and the invalid makes the avowal that his condition is owing to a void in the heart and to ennui. Traveling may become, at this time, a curative means, unless the powers of life are too much exhausted, or the advice comes too late."

Suggestive remarks and enforcing cases are found in a chapter on the secretions and excretions therapeutically considered; but the field of observation is now for the most part changed, and in place of physiological we have pathological phenomena and an exhibition of the relief of the latter by means more therapeutical or pharmacological than hygienic. In not a few cases it is true that suddenly suppressed eruption, giving rise to serious disease, may be restored by hygienic means, and all the functions resume their customary rhythm. We need not introduce examples in proof of this position: they must be familiar to every physician. If it were desired to make a study of any one secretion, the suspension and interruption of which are followed by the greatest number and variety of disorders, it would be the menstrual.

Instructive matter, albeit not new, is contained in a chapter on bed and clothing. The extreme importance of keeping or early taking to one's bed on the first premonition of many diseases, especially those of an epidemic character, cannot be urged too earnestly. In cholera, the result of the attack will mainly depend on an early precaution of this kind. In addition to the entire repose of the body in a recumbent position in bed, a uniform temperature of the skin is easily preserved and mild perspiration induced. Similar care is required at the termination of rheumatism, pulmonary inflammation, and in the exanthemata, and during incipient convalescence after these diseases. The sudden impression of cold on the skin has often been followed by relapse or alarming fatal sequelæ in patients convalescing from scarlet fever and measles. Frictions, as a powerful but too much neglected agent of therapeutical hygiene, find a chapter after the one just noticed.

In proportion to the advances we make in the work of M. Ribes are we met by increasing richness and variety of matter, and hence our regret that we are unable, for want of space, to do more than tantalize our readers by giving them the invoice, as it were, in place of a view of the things themselves. The third book treats of hydrotherapia in general; its first section is on ordinary hydrotherapia, or the common uses of water internally and externally; and also on special hydrotherapia, that which we commonly understand by hydropathy. The second section includes the subject of mineral hydrotherapia, or the use of mineral springs, in its hygienic relations. More than 260 pages are occupied in the discussion of these various topics—all of them of exceeding interest to the physician who would look beyond the contents of the apothecary's shop for an array of means furnished by nature, we ought to say a beneficent Providence, for the preservation of health and the prevention of disease. We are glad to have it in our power to offer some compensation to our readers for the present privation by pointing out to them the volumes of Dr. John Bell on Baths in their hygienic and medicinal applications, and on the Mineral Springs of the United States and Canadas. Contributing to the same end are the instructive works of Drs. Moorman and Burke on the Virginia Springs.

A new and large field for the exercise of intellectual and moral philosophy by the physician, in their application to the treatment of disease, through timely appeals to the affections, sentiments, and understanding of the invalid, is opened out in books third and fifth, with the latter of which the volume terminates. Beyond some few empirical trials, this field is scarcely cultivated at all by our medical men, who confound physiology of the brain with cloudy metaphysics; and who, because they have heard that the latter is unsatisfactory, and yields but little, infer that the former is equally unproductive, if not sterile. In whatever way opinion shall ultimately settle down respecting the merits of phrenology, as taught by Gall, its originator, and his able followers and commentators, Spurzheim and George Combe, it must, we think, be conceded that its study, more than that of any other body of mental philosophy, teaches a habit of intellectual analysis, and of noting the results, as they offer themselves in daily life, of the action of the innate faculties of the mind modified by the external circumstances of education, government, religion, and climate. We have advanced half way in the study of etiology if we remain ignorant of the power of the passions or the inordinate action of the propensities and sentiments, in giving rise to disease. So, also, we deprive ourselves of half the resources of therapeutics if we do not succeed in enlisting the aid of those passions, in their mitigated exhibition, for the cure of disease. Under both aspects daily opportunities are now offered. Would that they could have been entirely withheld by the absence of the fearful struggle which now convulses our once peaceful and happy country! A large record will be made by the number of intelligent and observing medical men in both of the antagonist sections of the United States.

The subject of the fourth book of the volume is one which has begun, of late years, to occupy general attention more than before. We refer now to physical exercises, under the head of gymnastics. The author examines them in their therapeutical application, and lays down rules for their employment. Too much importance cannot be attached to gymnastic exercises under the direction of an experienced and reflecting gymnast, as one great, perhaps the chief, means of arresting the physical deterioration to which the inhabitants of large cities are, of necessity, doomed, if no such correctives are introduced. In the enumeration of the different kinds of exercise, we do not find swimming, which, as it meets the double indications of bathing and of exercise, merits special consideration. As we are on this subject, we must not omit to express our gratification at the facilities, on a large scale, for all the gymnastic exercises and varieties of bathing, for both sexes, in the Physical Institute and Natatorium, under the direction of Mr. Hlasko, and his aid, Dr. Jansen.

In our regretfully abbreviated notice of M. Ribes's treatise on Therapeutical Hygiene we have restricted ourselves almost entirely to the task of analysis. However imperfect this has been, our readers cannot fail to see the wide range, and the variety of subjects discussed, and to acknowledge the great utility of their application, not only to the cure of disease, but also to their prevention. The reviewer, on the present occasion, would in earlier life have eagerly engaged in making a translation of this volume; and he does not abandon the hope, that in more propitious times than the present, some of his younger brethren will do this good service to the profession and to the general public.

ART. II.—*Maxims of Military Surgery.* (*Maximen der Kriegsheilkunst.*) By DR. L. STROMEYER, etc. Hanover, 2 vols., pp. 773, 1858; and Supplements, pp. 150, 1861.

[Continued from the May number, p. 425.]

Wounds of the head.—In the campaigns of Dr. Stromeyer, these were nearly all from projectiles: the country being so much intersected by small streams as to render cavalry of very little effect; and, in consequence, few sabre wounds presented themselves. Injuries of the head from falls, or from blows with the butt-end of the guns, were not numerous. It is natural, says our author, that one long accustomed to injuries of the head from civil practice should suppose that those received in war would exhibit the same phenomena, but in an intenser degree; and to be surprised to find that this is by no means the case. The essential difference consists in the comparative insignificance, with gunshot wounds, of the symptoms of concussion, and, what seems probably dependent on this, in the more local form, of the symptoms of reaction. It may be difficult to present this in a statistical form, as the slightest injuries received in civil life generally pass at once under medical attention, while wounds received in battle are immediately carried to the hospital. The slow, insidious inflammation which not unfrequently follows injuries of the head received in ordinary practice, has only been met with by Dr. Stromeyer, among several hundred injuries of slighter severity received from bullets, in a single instance. It cannot be urged, in reply to this, that early reception into hospitals protects men against these unfavorable incidents; for very many of the slightly wounded do not report themselves as ailing, or leave the hospital in a few days, from which practice Dr. Stromeyer has not met with a single example of any evil result. It is only necessary to read Pott's cases to be convinced that a short residence in a hospital affords inadequate protection against the evil consequences of a concussion from a ball, without wound or fracture. The severe phenomena of concussion, which arise from violence committed with blunt bodies moved with less velocity than bullets, are wanting in gunshot wounds. The injury from these is inflicted with so much rapidity as not to affect a wide surface, or produce an "actio in distans;" or, at least, so as to achieve these consequences in a very slight degree.

The patient wounded with a bullet in the head sinks to the ground, but soon recovers himself. If he afterward becomes unconscious, it is not the symptoms of concussion that are agents in the case, as frequently happens with those struck by a club. If these last are bled too soon or too freely, the original symptoms of concussion recur. It is from the small importance of its symptoms, however, in shot wounds of the head, that intellectual and critical observers, such as John Hennen, have been induced to devote so little attention to the concussion, and hold the discrimination of it to be of no practical value. Civil practitioners, and those who, like Guthrie, have, at the time of writing, enjoyed large civil experience subsequently to military, judge very differently. The danger from shot wounds of the head is not in proportion to the remote sympathies awakened, but to the amount of injury undergone by the party struck by the weapon. Every soldier who had a portion of the skull, exceeding three or four square inches, crushed, in the experience of Dr. Stromeyer, perished on the field of battle.

Extensive shattering of the skull, with laceration of the brain, produces death so speedily, that little opportunity is afforded for investigating the phenomena; the more so as the attention of the surgeon, in the first days after a battle, is so intensely demanded by other cases. The bleeding is often important, especially where the sufferer is carried to a distance, masses of the brain protrude, and the subject sometimes revives from the apparent approach of death, to continue for a day or two in a state of unconsciousness, not always accompanied with palsy of particular limbs.

Gunshot wounds of the head, on account of their frequency, and of the benefit to be derived from an appropriate treatment, are well worthy of the greatest care and attention.

Conical and spherical bullets inflict the same injuries; but the discrimination between them can frequently be made from the shape of the wound in the bone, or of the portion of pericranium which is stripped off.

Case where the ball goes quite through the head.—Dr. Stromeyer has never seen life preserved, in a single instance, where a bullet had passed through any of the larger diameters of the skull. Of wounds penetrating through smaller segments, he has seen recoveries. The shorter the passage through the brain, and the more remote the route from the base of that organ, the longer may life continue; and this may extend to weeks, or even months. Yet he has never seen a recovery, where the wound or the parts adjacent formed an abscess. The ball drives the fragments of bone into the brain; and sinuses generally form on various sides of both the point of entrance and that of exit. Yet, in these frightful wounds, the activity of the heart is only depressed for a short interval; the pulse becomes full and hard, effusions of blood become mixed with the crushed brain, and blood and brain not unfrequently issue together from the wound, when the latter is sufficiently gaping.

Men who had received wounds of the first-mentioned, central description, not unfrequently, where the distance was long, died in the transportation wagons. "Without doubt," he observes, "the jolting of a wagon is the best means of dismissing such unfortunate individuals from the world;" "and certainly that which contributes so much to accelerate the termination of fatal cases, must be well calculated to aggravate injuries of a more moderate character."

> "On the 6th of April, the Hanoverian soldier, B., received a ball in the left temple, which pierced the os frontis a little above the suture with the parietal and the greater wing of the sphenoid, crushed the cribriform plate and right smaller wing of the latter, and escaped through the right orbit. At the point of entrance of the missile, brain escaped, and from that of exit the lachrymal gland hung protruded. The patient was transported four miles. Symptoms of concussion were not present; but the sufferer was fatuitous, blind, and deaf. He could move all his limbs. He roared or screamed continuously, day and night, for two months. It sometimes seemed as if he observed the presence of light. He ate, with great eagerness, whatever was placed in his mouth. He ceased to scream a short time before his death, which took place on the 5th of June. The whole route of the ball was converted into an abscess."

The ball penetrates into the brain.—It is not always the case that a ball is imbedded in the interior of the head, where first external appearances give that impression. A gaping wound may exist in the skull, and the finger or probe may pass without impediment to a considerable depth into the brain. The ball has shattered the part of the skull on which it impinged, driven the fragments deep into the organ, and then fallen to the ground on the outside, from its motive force being exhausted before it sunk beyond its middle. This case has occurred to Dr. S. several times; and the head has been opened and no bullet found. If a cure take place under such circumstances, of which the writings of military surgeons furnish examples, it has been believed that the bullet has been healed over. In the opinion of the author, those cases only should be reckoned as having undergone this, in which the patient has subsequently died, and a bullet been found.

The phenomena produced by this lesion vary according as the ball has effected much destruction in its ingress, or has been easily stopped and remained arrested in the brain. In the following cases, the symptoms may appear inconsiderable:—

"On the 10th of September, 1850, a Danish soldier was brought to Rendsburg, in whom a bullet had entered through the parietal bone near the lambdoidal suture. The wound in the cranium admitted the fore-finger without difficulty, and all the pieces were driven into the brain. Neither vomiting nor any of the other indications of a concussion of any continuance had been present. The patient saw and heard, and could move all his limbs, but was dumb. When left quite without interference, he lay quiet, but did not sleep much. Under an antiphlogistic treatment, this state of things continued ten days. A large part of the splinters were brought by the motions of the brain to so close an approximation with the interior of the cranium that they could be easily removed with the forceps, and without the application of any force. After this little operation, however, the patient's restlessness greatly increased; and he died on the next day. The ball had been driven into the left anterior lobe of the brain. The cerebral substance over the track of the ball was decomposed and putrid, and beyond this was inflammatory softening. The brain was hyperæmic throughout."

"The much-lamented Captain von D. received, on the 23d of May, 1849, a rifle-bullet, which passed through the leather escutcheon of his cap, and penetrated his left temple. Insensible as he was, he was placed in a wagon to be removed to a house at a distance, rendering necessary a journey of half an hour. The wagon had scarcely started when he became affected with clonic spasms of all his limbs. As soon as he was quieted and becomingly disposed, the same attempt was repeated, with the same result. He was then placed on a hand-barrow, and carried to the place proposed, without any repetition of the spasms. I saw him in the afternoon. The ball had entered the parietal bone one and a quarter inches above the zygomatic process. On the opposite temple, a little nearer the zygomatic process, was felt, under a somewhat pasty swelling, a crepitating fragment of bone, of considerable size. The eyelids were swelled to bursting with extravasated blood; and this phenomenon took place immediately after the reception of the wound; thus authorizing us to conclude that the orbit was shattered. Vomiting and other evidences of concussion were not present. There was no palsy of the limbs; hearing was entire; and consciousness in no degree destroyed. The wounded man did everything we wished. When told that he was to be bled, he pulled off his coat, and, at the close, assisted in drawing it on again. A venesection of eight ounces was undergone without any observable sinking of the pulse. At a later period, he frequently took up the vessel to receive his urine; and he held the glass when he drank. Sometimes, however, his urine escaped involuntarily. The most remarkable occurrence, in these respects, was that he had lost the control of his organs of speech. Notwithstanding abundant evidence of the continuance of consciousness, he gave not the slightest answer to the questions that were put to him; although, at the same time, he showed unmistakably enough that he understood them. On the other hand, he was heard to utter, from time to time, the involuntary cry of pain, 'Oh, God! yes.' Thus the connection between his organs of thought and the nerves of those of speech was interrupted; and there ensued, in the latter, involuntary efforts at action by the expression of pain which has become so common in the north of Germany.

"In this case, it would not have been impossible to extract the ball, not by the narrow wound of entrance, but by the opposite side, where it had loosened so large a piece of bone. It would have only been found necessary to lay bare and remove this, to obtain access to the ball; which, possibly, might have laid close behind it. Yet I did not think this advisable. It should be considered a prostitution of surgery, when operations are performed in such hopeless cases. The anterior lobes of the brain were evidently crushed, and the upper parietes of the orbits shattered. The extraction of the ball could only accelerate death, promoting, as it would, the decomposition of the contused brain by the access of air.

"Death ensued on the 20th of May. On dissection, I found that, from the wound of entrance in the skull, three fissures radiated in different directions; and that a small portion of the ball had been scraped off by the bone. Near an inch and a half of each of the anterior lobes was crushed by the ball and the fragments of bone, and was converted into a paste with half-coagulated blood. The ball, an irregularly disfigured rifle-bullet, lay upon the cribriform plate. Probably it was the motion of this, during carriage by the wagon, that occasioned the spasms. The width of the fragment, from the inside of the parietal bone and of the ala magna sphenoidei, was one and a half inches; so that the extraction of the ball by this route had been possible. But, from its altered shape, the task of certainly and safely finding the latter would not have been so easy. We made the attempt on the corpse, prior to the section of the skull; but gave it up, from wishing to avoid moving the parts from their original position. The extraction of the ball, in these circumstances, could, in no case, answer any useful purpose, as there were innumerable small splinters of bone buried in the brain, which could not have been removed at the same time."

"The greatest amount of destruction in the brain, produced without the immediate cessation of life, and with a partial preservation of consciousness, was that of a man shot in the forehead as he was going down stairs. He insisted tenaciously that he had fallen down stairs, and thrust a splinter into his forehead. Portions of brain were forced from the wound, and *a probe was introduced six inches.* His pulse and temperature were natural; he moved his limbs automatically; and he frequently grasped at the injured part. He often answered questions quite correctly, but sometimes not at all; and during long ones, seemed to fall asleep. No one could induce him to tell his age. He became gradually more sleepy; and died in twelve days. The ball had passed over the superior arch of the orbit, and lodged within the dura mater, above the transverse ridge of the os occipitis. Its route was filled with splinters, crushed brain, blood, and pus; and among the splinters was one of the smaller wings of the sphenoid bone. Two fissures extended below the base of the brain."

Cases of this kind have occurred to Dr. Stromeyer a number of times; but he has seen none in which life was preserved. "To these are, in general, most nearly analogous some thousands of cases met with in great wars, among which we at once stumble upon a case that unites all favorable circumstances; perhaps attended by physicians who are not afraid to bleed, as our young German Æsculapiuses now are." Yet Thompson found no single recovery of such among all the wounded of Waterloo.

The ball remains stuck in the wound of the skull.—The difference between this injury and the one last enumerated is much less than might be supposed. It is true, the ball can be removed; but this is of by far the less advantage, as the fragments of the penetrated bone are generally forced through the dura mater and driven into the brain. This is more certain to happen if the ball strikes at a right angle. A shot impinging at an oblique angle may depress the inner table without seriously injuring the dura mater. In injuries of this class, it is not uncommon for the sharp edge of the broken bone to split the ball quite through.

Principal Stromeyer gives two very curious and instructive cases under this section of his subject, which our space will not suffer us to copy without abridgment.

In one of these, the ball actually fell out and was lost, between the inspection of the surgeon of the battalion on the field of conflict and that of his chief at the hospital; and the stellated form and the appearance of the wound rendered it hard to believe, when Dr. Stromeyer saw it, that such a depression had really contained a ball. The elasticity of the bone and the distending parts, and the pulsations of the brain, will suggest themselves to the reader's mind; but Dr. Stromeyer hazards no hypothesis as to the cause of this change. The patient possessed full consciousness and the use of his limbs. It was determined to extract the fragments: two breaths of chloroform produced a mild anæsthesia, and fragments quite loose were removed, to a depth equal to the whole length of the fore-finger, and in the direction of the lower part of the right hemisphere. It was then felt necessary to stop; death took place in four days; and a large mass of the hemisphere was shown to be crushed and still interspersed thickly with fragments of the vitreous table. Dr. S.'s reflections led him to think that it was madness to admit the air to such a mass.

Another soldier received a wound which he himself described as insignificant. Two days after, the surgeon described it as "an unimportant wound by grazing." It was not minutely examined, but carefully bandaged. At one visit, the bandage was not removed, on account of the insignificance of the injury. In the third night, headache and stupor appeared, an examination was made, and a ball was found wedged in the parietal bone. The late Professor Langenbeck removed the ball with an elevator, and took away the sharp edges of the surrounding bone with a saw, and the loose pieces, partially driven into the brain, with a forceps. Not the slightest amelioration ensued, and in twenty-four hours (four days from the reception of the wound) death took place.

The ball is split by the sharp, broken edges of the bone.—A soldier received a shot in his left parietal bone. Three days after, while in a state of stupor, he was examined by Surgeon-General Niese, who reports the case. He immediately discovered half of the ball within the crown of the skull, an inch from the small wound of entrance. This was widened in the integuments, and a hole in the cranium discovered by doing so. The remaining half of the ball was close behind this, under the sharp edge of the opening in the skull, wedged so firmly that Dr. Niese could not remove it by direct efforts. He set the crown of a trepan directly over it, and removed it after perforating the cranium. (The removal of the first half is not particularized.)

No relief to the symptoms, even momentary, was apparent as the result of these operations. Under an antiphlogistic treatment, consciousness was, at intervals, restored. The patient died at the end of seven days. The dura mater and the brain were torn by splinters; and the crushed portions of the latter, in a large extent, softened and made to contain abscesses.

The ball fractures both tables of the cranium without penetrating.—These injuries are frequent; and, if they receive proper care and attention, generally terminate in recovery. They are seldom found except on the parietal bone, which affords more frequent occasion for the ball to glance, whether the face of the man receiving the wound be turned toward him who fires the gun, or in another direction. Shot wounds on the forehead, temples, or occiput are generally mortal on the field of battle; and where this is not the case, it can mostly be shown, from the appearance of the wound, that the impaction of the ball was oblique.

Principal Stromeyer has never seen cases in which both tables of the skull were simply fissured by a ball. When a ball strikes with force, it always indents the outer table; but he will not say that the fissure of both tables is theoretically impossible, if the cranium be brittle. The proper division of these injuries, therefore, is that which is derived from the amount of injury done in the inner table; whether fissures, slight depressions, or depression sufficient sensibly to encroach upon the cavity of the cranium.

Fissure of the tabula vitrea.—Dr. S. here compares these to the fissures revealed by indiscreet incisions, made after a blow, or a fall on the head. A ball, being of small weight and great velocity, shatters and indents the outer table, and then of necessity tends to indent the inner. Its pressure is so instantaneous that it cannot reach a wide surface, but is confined to the vicinity of the point of contact. A small, unyielding substance, driven by a hammer through a hard board, tends to cause the latter to burst open with some elasticity; a bullet knocks a piece out.

Moderate indentation of both tables, with splintering of the inner.—This occurs much more frequently than might be inferred from the considerations to which we have been thus far led. It is discovered by the trepan; or inferred from the symptoms being more severe than in the natural course of things, and indicating some additional cause.

The depression is such as to show undeniably that the cavity of the skull suffers sensible constriction from it.—It is almost without exception the case, that the depression is oblique, and deeper on one side; a circumstance which Dr. S. ascribes to the obliquity of the incidence of the ball. The lesions of the brain and dura mater can only be conjectured from the depth of the cavity in the bone, and the unfavorable course of the symptoms. There is no certain inference to be drawn relative to perforation, except from the presence of brain in the wound. From a wound of this description, inflicted by a grape-shot, he once found brain upon the sufferer's shoulder strap. The general symptoms on this point furnish no resource at all. Puncture of the dura mater does not depend upon the depth of the depression, but upon the projection downward of sharp-pointed fragments.

Dr. S. here apologizes for grouping together such very dissimilar changes in vital parts, an arrangement which he fears will not be considered as methodical; an apprehension certainly not needed. He is not a lecturer on pathology, but a master of military surgery, teaching us what actually occurs in some of the most important of all possible experience. The study of methodical classification should come first at the university; it is enough for the man of great practical authority to fit the already well-informed student for the duties assigned to him in his peculiar situation and responsibilities.

The *diagnosis* is easier than in civil practice, as there is always a wound present, which gives more or less opportunity of inspecting the wounded hard parts. A scrupulous examination of this, by sight and feeling, will rarely fail of betraying the internal injury. However slight the case appear, this should always be made; and done at the first opportunity. The actual danger is most formidable; and a minute examination keeps awake the attention of the surgeon. If delay be incurred, the handling of the part, or the application of instruments to it, is liable to inflict incalculable injury; and the chance of really useful information, from doing so, is entirely problematical.

Patients thus wounded were generally, but not always, prostrated to the ground. They soon, however, recovered from their stupefaction, could walk and get into a wagon, acquired some pain in the head and some giddiness on the road, and were generally relieved from these last symptoms when placed at rest, and subjected to cold applications. There were only a few who had vomiting on awakening from their stupefaction; and this was of short continuance. Those who had deep penetrating fragments, had more or less fixed pain in the injured part, and were more apt to be overcome with giddiness and a slight stupor than the others. Whatever accelerated the circulation, muscular efforts, or agitation, either emotional or of the senses, increased this tendency to the appearance of preoccupation of the mind and to pain in the head. In slighter cases the cephalic phenomena were often absent, until unfavorable agencies brought on congestion or inflammation. As a rule, no paralysis occurred; and the patient could move all his limbs in general, even when congestive or inflammatory phenomena had appeared. In individual cases, palsy appeared at the commencement; always on the opposite side. A pair of fingers, a hand, an arm, a pair of toes, a foot, a whole inferior extremity, or an upper and lower limb at the same time, were more or less deprived of power. These occurrences could be reduced to no exact anatomical or physiological connection with any particular locality. Of two injuries, in precisely the same part of the head, one was followed by a tedious incomplete paralysis of a thumb and index finger; and the other underwent the same affection in a great toe. "These observations," Dr. Stromeyer remarks, "the physiologist, if not himself a practitioner, must be content to receive from those who are such."

The *course* of these cases is exceedingly various, according to the attendant circumstances. Under favorable conditions, that is, with an antiphlogistic treatment, quiet and pure air, the symptoms are so slight as to give rise to the highest degree of astonishment. Dr. Stromeyer, in one place, speaks strongly of the disadvantage of the fear of blood-letting prevailing among the young men of the period, in Germany. This resistance to a doctrinal fashion which he finds erroneous in fact, is not to be misconstrued, as has been done in America, into the recommendation of extravagant abstractions of blood. He in no place lends the slightest countenance to any such practice; but his treatments are characterized by reason, moderation, and good sense, as much as by the profoundest skill. The imputation will not adhere to his character, whether it be used to promote what is called homœopathia, or the teachings of new doctrinal men within the legitimate profession.

Under this rational, unprejudiced, and disinterested treatment, no important congestive or inflammatory appearances occur, the wound does not swell much, is not very painful, and undergoes a healthy suppuration. In this are gradually loosened the deeper splinters of the outer table, the largest of which can generally be removed after the first week. Much later appear the fragments of the inner table. This repulsion of the splinters is partial throughout. In the outer table it generally embraces a wider surface than in the inner. In the latter it is confined to the loosest among those more deeply depressed. The fragments of this part, which are more closely connected with the rest of the cranium and with the dura mater, become rounded off at their points, and amalgamated together by a thin stratum of new bone. A small tumor, composed of these united materials, is formed in the cavity of the wound, leaving, however, at the deepest point, a vacancy communicating with the external air. This orifice seldom forms part of a direct canal. The contained mass forms a kind of shield, incomplete at one of its edges and somewhat larger than the external opening in the skull. The probe almost never reaches the dura mater by a direct route, but does so in a lateral direction. Whether this vacancy is ever filled with bone, appears to depend upon its size. The expectant treatment has the very important advantage that the brain, by that method, generally retains its protective covering of bone.

If the dura mater be pierced, the consequences, under a favorable line of conduct, are not so serious as would, *a priori*, be imagined. An adhesion very soon forms between the visceral and parietal folds of the arachnoid, by which the cavity of that membrane is closed; and the wounded dura mater becomes attached to the brain. The slow separation of the deeper splinters of the vitreous table allows time for the consolidation of these adhesions; one of the advantages of leaving them to the powers of nature. The healing process is more rapid than in ordinary blows and falls, from the circumstance that the adjacent parts, within a very limited distance, are uninjured.

The ball fractures the inner table without injuring the outer.—Our author has seen this injury but once. In one instance, besides, a scarcely perceptible fissure existed upon the external surface; and he satisfied several practiced ears of a difference of tone in tapping on the part in question and on adjacent spots. He diagnosticated a fracture of the inner table. The patient died of pyæmia, and the diagnosis was verified by dissection. The tone was higher in the musical scale, over such an internal splintering, than in other localities. He tapped with a silver probe.

He finds that this means of discrimination was known to Lanfranchi and Ambrose Paré.

Fragments may be driven in, to a small depth. This singular injury can be compared, as Dr. S. remarks, to the partial fracture of bones produced by pressure. The outer table has evidently more elasticity than the inner. This elasticity can be easily exemplified, as our author quotes from Hyrtl, by throwing a recent skull upon the floor, when it will rebound.

Many more of these would, no doubt, be discovered if the practice of trepanning to search for them were continued. There is no great presumption in assuming that their course, as a rule, would be favorable if the patient were kept for a sufficient length of time on an antiphlogistic diet; as these must evidently fare better than the preceding class, in which air had access to the fractured inner table. The older physicians labored under a great anxiety lest the fluids of the wound should not find an easy escape. They knew little of the comparative recovery of subcutaneous wounds, and those exposed to the atmosphere. They knew not how to explain what became of the secretions of the part. We now know that by protection from the air, and by a proper management, the fluids effused are reduced to a minimum, and no more of them is produced than suffices for the healing process; never, in the general rule, being so copious as to require an outlet. Within the "decade," as Principal Stromeyer remarks, this last has been thought necessary. Yet, he adds, the faithful and honorable details of cases by Percival Pott exhibit, in the clearest manner, that the admission of air to the wound is always followed by a great increase of suppuration. In most cases the increased secretion rendered a second trepanning necessary, and even a third; one operation thus becoming the cause of another.

The strongest indication for trepanning was thought to be stupor or insensibility; and it certainly, as is acknowledged by our distinguished author, requires a very solid conviction of duty in the case to refrain from it under such circumstances. It is so common to see the clearest consciousness instantly return on the elevation of a fragment, or the removal of an accumulation of blood. Yet we should recollect, he is of opinion, that typhus-fever patients have often lain for days and weeks in the deepest stupor, and yet gradually recovered the entire control of their mental faculties; and that trepanning, with the most entire success of its physical purpose, the elevation of a fragment or the removal of an effusion, in "interminably numerous cases," has exhibited absolutely no influence upon the return of sensibility; but this gradually took place under an antiphlogistic management. It requires that we should have actually viewed continuously the successful cure of wounds of the head without trepanning, to acquire the same secure and confident feeling of the anticipated results of our course that almost every physician feels with his typhus-fever cases.

We fear the following sentence will meet with opposition in the United States:—

"Would we not hold him a miserable quack who should still, for a mere soporose condition alone, want to give a typhus-fever patient musk, camphor, or assafœtida?"

It will not be long, he predicts, before men will pronounce no favorable opinion upon the surgeon who wishes to trepan for a soporose condition. For this he appeals with confidence to the numerous young physicians who witnessed the results of the Schleswig-Holstein campaigns of 1849 and 1850.

The ball only injures the outer table.—A number of cases occurred in which the ball carried away more or fewer pieces of the outer table and left a little lead in the diploe, without doing any further mischief. In a little time the fragment of the ball becomes loose, and can be removed.

In one case, a physician, who operated with levity, removed such a fragment with the trepan, and believed that he had left uninjured the vitreous table. Principal Stromeyer showed him the pulsations of the brain distinctly, at the bottom of the cavity he had made. Happily, the case terminated well.

The ball simply bruises the skull.—It is so notorious that contusions of the skull received in time of peace are often productive of dangerous subsequent effects, that one cannot help anticipating, *primâ facie*, that contusions from shot would have similar results. This, however, appears to be by no means the case. Dr. Stromeyer has seen only a single instance in which mere contusion of the skull from a ball was followed by death. Were we speaking of a less elevated and careful authority than our author, we should have said that this case, which he relates, is not an example of such an injury; the shot "cutting through" (durchschneidend) the sagittal suture. The case is very valuable; it is want of space that compels us to omit it.

Death from this cause is much less frequent in civil life in Germany than it formerly was, owing to systematic precaution in the medical men, and in a very great measure from the use of cold applications.

The ball injures the integuments only.—These hurts are generally contusions from flattened balls, grazing wounds with the loss of a piece of the scalp, or occasional "seton-wounds," in which the ball slips, for a short distance, under the scalp. The latter wounds are commonly, but not always, accompanied with injury to the bones. Sometimes a ball is arrested under the scalp.

In general, the discrimination of the injury done is rendered easier by the existence of an open wound; but these sometimes are not present, or are inflamed; in which case they cannot be completely examined without injury.

"It is not long," says Dr. Stromeyer, "since every surgeon thought it his holiest duty to make a crucial incision in every wound of the head, no matter how trifling was the injury." He urges, at some length, the impropriety and cruelty of such a practice; and concludes by alleging that it was unnecessary in his own large experience, and by almost leaning toward tolerating it as a preventive or cure of phlegmonous erysipelas of the scalp.

It sounds strange in the ear of a pupil of the Pennsylvania Hospital, and of the late Dr. Physick, to hear such a discussion, or an admission that this had been recently practiced. We had imagined, between 1814 and 1819, that such a mode of torture had been once and forever abandoned among civilized physicians; and we had not then heard of it as a remedy or preventive of erysipelas. The incisions of limited extent which were recommended and said to be still used by some practitioners, we were much inclined to consider of doubtful expediency, and fit never to be used except in very extreme and evident cases indeed, and never in any case that we saw. We supposed that in more crowded cities and hospitals, in besieged places, and during some epidemics of which we never witnessed examples, a different state of things might render this less degree of severity proper, though never so with us. It is something to have to boast, over learned, accomplished, and thoroughly-trained Germany, a little gratification of vanity such as this.

For the mere purpose of diagnosis, Dr. Stromeyer entirely reprobates this practice, and compares it to severe handling and giving unnecessary pain to a recent fracture, and to scraping off the pericranium from the skull and pouring ink on the bone to discover a fine fissure; an affectation of exactness, the result of which was to be of no value when obtained. An incomplete diagnosis in such a case is vastly better than the positive infliction of injury on the patient. For immemorial ages, men have known the existence of real danger in common blows on the head; yet the remedy for these, with watchfulness, is a dose of Epsom salts and the application of wet towels. In his own experience he has found cruelties unnecessary; and in all the Holstein wars has seen but one death from injury of the head where no portion of the cranium was shattered—the one which we have recorded above. The ball, he resumes, never produces so much concussion of the head as is customary in the falls and blows of civic life.

Proportion of cases.—At the battle of Idstedt, among 1200 wounded, 60 had shot wounds of the head, of which 31 were of the soft parts only; wounds of the head being thus in the ratio of five per cent. At the storm of Frederickstadt, of 500 wounded, 40 were hurt in the head, or eight per cent. In this case, the lower extremities of the men were very much protected by a dike.

A desire to be useful, in the present unhappy position of our country, induces the present writer to devote his remaining space almost exclusively to the treatment. First, however, he would wish to present the heads of the subjects treated of in the intervening space. Nothing is neglected by our conscientious author; nothing is forgotten. The subjects are,—Concussion, Compression, Congestive and Inflammatory Reaction, Traumatic Erysipelas of the Head, Traumatic Phlegmon of the Head, Traumatic Osteitis of the Cranium, Pyæmia, Phlebitis of the Encephalon, Secondary Encephalitis and Osteitis, Typhus with wounds of the Head, and Delirium Tremens with wounds of the Head.

Comments on the treatment.—It seems to have been the intention of our experienced author, in the preparation of his book, to leave himself at entire liberty to judge of the extent to which he is to carry any of the important inquiries to which he devotes it. He does not give us any entire system, any detailed formula of action, or any minute directions; and does not write unless he sees a benefit likely to be derived from the facts within his knowledge, or from his own reflections on them. We are supposed to have gained our systematic knowledge elsewhere; and his communications consist exclusively of criticisms. He occupies very considerable space in an examination of the opinions of celebrated practitioners on the expediency and indication of trepanning.*

As much as three hundred years ago, Lanfranchi gave as restricted rules for resorting to the trepan "as are now by Dieffenbach." Others, however, urged its application to the most extravagant length.

In 1811, Dr. S.'s father showed him a man with a large and deep indentation in his head, from a blow, healed without trepanning. Some time after, he saw Wedemeyer trepan a man with a depression as large as that made by a bullet, but which was the effect of a blow delivered by a piece of building stone, containing a projecting pebble. The man had no bad symptoms for three days; on the fourth he was trepanned, and he died on the fifth.

Dr. Stromeyer studied seven years, and attended hospitals for three years of the time, in Berlin, Paris, London, and Vienna; and never saw a case recover by trepanning, during all that course of attendance! (Habe ich nie einen Kopfverletzen durch Trepanation heilen sehen.) Various severe instances recovered without the operation. In his first half year as a professor, he saved a laboring man, whom he trepanned for a complicated fracture. Near the same time, a little girl had her head pinched between two large stones. One side of the head was raised higher than the other; and a cavity produced in the surface, which held a tablespoonful of water. No operation was performed, and she got quite well, but the obliquity of the head was not removed. Dr. S. laid his trepanned cases before a scientific meeting at Erlangen, in 1840; on which occasion his friend Textor told him that, in his (M. Textor's) opinion, trepanning had become unnecessary; but as the latter did not show him how nature removed deep depressions, Dr. Stromeyer could not help receiving the dictum more as a paradox. Still, he never forgot it; and feels bound to do justice to his friend as to the matter in the present volume.

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* We refer some English critics to the following:—

We have seen no authority for *trephine* but Wiseman, who gives both words in the same sentence, and applies trephine to a differently-made instrument. *Trepan* has a regular Greek origin; *τρύπανον* and *τρυπάνη*, from *τρυπάω*, I bore. *Τρύπανον* is as old as Homer, Od., ix. 385, and is used by Hippocrates; certainly sufficient authority. Liddell and Scott quote it from Hipp. apud Galen. The curious may find it in Foes, ed. 1657, p. 544–54, de intern. affect., and 911 B, de cap. Vuln. *Trapani,* in Sicily, was undoubtedly within the Greek civilization.

Since that time, he has only once performed the operation. This was on a boy twelve years old, in Munich. Part of both tables of the parietal bone had been crushed by a kick from a horse. Dr. Stromeyer removed the depressed portions of the outer table with a trepan of large size; and the inner, with a smaller one. The boy died; but Dr. S. believes that his death is to be ascribed to another kick, which produced a copious effusion of blood in the upper mediastinum, and impeded or paralyzed the action of the lungs.

In his service in the south of Germany, he had many cases of injury of the head; fewer in Kiel, in Holstein; which he ascribes to the gentle, careful, and self-controlled habits of the people.

From Messrs. Dease and Astley Cooper, and from statistics prepared by the honorable and judicious Brodie, he had become settled in the belief that complicated fractures of the cranium should be trepanned, to prevent the accumulation of pus. Yet he afterward found fractures of the skull heal so well that he began to think that, if it was in the power of treatment to prevent diffused suppuration in all cases, the aphorism of Brodie was either very elastic, or had lost all hold. It seemed to him demonstrated, that the access of air had a decidedly injurious influence.

Two more operations ensued in the hands of Professor Langenbeck, with a speedily fatal result. After the battle of Kolding, eight patients were brought to him with fractures of the cranium, depressions, and cerebral symptoms. In seven, the removal of the fragments was left to nature; and they all entirely recovered. The eighth continued quite insensible, and without diminution of his symptoms, for seven days. Dr. Stromeyer was then induced to dilate the wound and extract all the splinters. The dura mater was found to have received a small slit.

The suppression of the cerebral functions now became more striking; and an erysipelas of the face took place. The sequestrum was not removed until it was entirely loose. In five weeks, the stupor gradually left him; and he became quite well, gratifying his comrades by a flow of cheerful humor.

This treatment Dr. Stromeyer would call neither operative nor expectant. It was *antiphlogistic.* Some of our readers may be reminded that this does not imply abstraction of blood. Dr. S. recommended it to the young surgeons under his direction; and was happy to find that all the wounds by small arms, in which injury of the dura mater and brain was doubtful, or was only inferred from the depth of the depression, although the patients might have lain in stupor for weeks, got well, without either palsy or impairment of the faculties.

The preceding is all that our space and time will permit us to introduce of the experience and judgment of this great practitioner. The disastrous crisis which we deprecated in the early part of the first article of this review, has now come upon the American Union; and the present writer finds it difficult to believe that any lover of his country, or any true physician, can other than wish the publication, as soon as practicable, of a good translation of this invaluable work. He begs leave to announce that he has the task of converting it into our language now in hand.

ART. III.—*Another Letter to a Young Physician; to which are appended some other Medical Papers.* By JAMES JACKSON, M.D., Prof. Emeritus of the Theory and Practice of Medicine in Harvard University. 12mo., pp. 179. Boston: Ticknor & Fields, 1861.

WE find it extremely difficult to express properly our high appreciation of this little book; a condensed record of the experience of sixty years' practice of medicine, by one universally adjudged to be entirely competent to the responsible function so long exercised; a carefully reviewed statement of the opinions and views stamped permanently on the mind of its venerated author, after all his questionings of nature and observation of varying events; the results ultimately arrived at "per tantos casus, per tot discrimina rerum."

Surely such an utterance from such a man may reasonably be considered as, in a certain sense and degree, oracular; and so, indeed, we do regard it. Dr. Jackson is everywhere known, beloved, and esteemed by our profession; and it would occupy large space if we were to repeat in set phrase the sentiments of respect and honor with which it is as well our duty as our pleasure to greet him, whenever, from the repose and retirement of his serene old age, he presents himself to claim our attention.

In the preface to this volume we have, clearly enough stated, the purpose of its publication. "Within the last year a grave question has been agitated among us, on which one whose experience has extended through more than half a century, may be thought qualified to form an opinion. The question is, whether there is any good to be derived from the practice of medicine? It is because this question has been brought before the public, that I have prepared the following Letter."

We shall proceed, with all deference, to offer a few remarks upon this Letter, from which, not only the young physician to whom it is addressed, but even the veteran disciples of the healing art, may derive profit and instruction.

It does not very clearly appear how this ancient dispute has been revived; how "the question has been again raised," or by whom it has recently been asked. Referring to the discourse delivered by Prof. O. W. Holmes, before the Massachusetts Medical Society, at their Annual Meeting, in May, 1860, Dr. Jackson observes: "Some of our brethren have regarded him as denying the utility of our art, and it was so understood by many persons not of the medical profession." But our author does not so understand the eloquent orator. He considers Dr. Holmes as merely desirous "to inculcate caution in the practice of medicine," and represents him as placing "in a strong light the evils which may be occasioned by the action of potent drugs;" and "urging us to put a reliance upon nature, and to pursue what has been called the expectant plan of treating the sick in all cases where the evidences in favor of some active practice are not clearly shown by experience." He goes on to say that he has "met the question which has in fact been entertained among us since the delivery of this discourse;" but that he has not "taken a side for or against the utility of medicine in the style of a partisan. The stand I take is somewhat that of a witness, called upon in the character of an expert." V. Preface. But in the Letter itself, page 45, he declares, "I have not forgotten that Dr. Holmes advises us to think more of the expectant treatment of diseases than we usually do. I go with him to a certain extent; perhaps as far as he does." To know precisely the position of our author, then, we must inquire what Dr. Holmes really means; *how far* he has gone; and what he actually intends by the language employed in his "Discourse."

In that document itself we have the distinct declaration, that "a body of enlightened men, organized as a distinct profession, would exist, be required, be respected, and trusted as now, whose province should be all that is now carried on by physicians, even if every drug from the vegetable, animal, and mineral kingdom were to disappear;" except, of course, that they could no longer prescribe or administer medicines. For the medical profession thus deprived, thus rendered impotent for evil, Dr. Holmes entertains and expresses a high respect. He considers that this condition of things "would leave the medical profession the most essential part of its duties, and all or more than its present share of honors; for it would be the death-blow to charlatanism, which depends for its success almost entirely on drugs, or at least on a nomenclature that suggests them."

In the discourse itself, also, we are presented with the insidious statement, in the shape of a definition, that "medicine is every unnatural or noxious agent applied for the relief of disease;" and in a note, referring to another dogma laid down in the text, that "the presumption always is that every noxious agent, including medicines proper, which hurts a well man hurts a sick one." We are advised, "that a noxious agent should never be employed in sickness, unless there is ample evidence in the particular case to overcome the general presumption against all such agents; and *the evidence is very apt to be defective.*" (The italics are ours.)

A recent essayist has very ingeniously shown that the reception of almost every proposition offered in any discussion, depends upon "how you put it;" and the remark applies well here. While speaking with mellifluous laudation of the medical profession, stripped, disarmed, and powerless, Dr. Holmes settles the whole question against their medicines, or, at least, grievously prejudices and prejudges it by "the way he puts it." If these are, as he describes and defines them, necessarily and uniformly *noxious agents*, we must beware of them, or handle them, if at all, with fear and trembling; if not in fact, virtually, with a rope round our necks. He gives them in advance a very bad character, and warns us that all evidence in their favor is "very apt to be defective." Now, we shall see that our venerable author furnishes in his Letter a good deal of such evidence, and in decided laudation of a pretty long list of these noxious agents, and is thus directly at issue with the philosopher and poet.

They have no contest surely as to the character and value of the profession, or "the utility of the art." Dr. Holmes maintains that the abolition of drugs "would leave the medical profession the most essential part of its duties, and more than all its present share of honors." On the other hand, Dr. Jackson "would hardly be willing to practice medicine without opium; would be unwilling to banish either stramonium, or even aconite, though very hazardous, (page 33;) and is fully convinced that in the early stages of diseases, powerful remedies may be employed with great benefit." Dr. Jackson, then, does not *go as far*, by any means, as Dr. Holmes.

Let us contrast the materia medica of the two physicians. That of Dr.

Holmes is comprised in a brief paragraph. It includes "Opium, with a few specifics;" which a note enumerates as follows: cinchona, mercury, arsenic, colchicum, iodine, sulphur, and antiscorbutics, and anæsthetics. In a previous note he speaks, with contemptuous irony, of specifics in general, graciously encouraging us to hope for an enlargement of the list, "when an oil is discovered that will make a bad watch keep good time; when a recipe is given which will turn an acephalous fœtus into a promising child." Wine, iron, and various salts, component elements of the body, he transfers to the materia alimentaria.

Dr. Jackson begins his pharmacopœia with the respectful mention of "Mercury, antimony, arsenic, and some other potent metallic medicines," which he "should be sorry to be deprived of; should wish to keep on the list of my materia medica." Page 16. He afterward adds ipecacuanha, squill, opium, conium, hyoscyamus, stramonium, aconite, cinchona, sulphuric ether, chloroform, iron, bismuth, cascarilla, quassia, cod-liver oil, cathartics, a large class heavily frowned upon by Dr. Holmes, colchicum, guaiacum, and "many more medicinal drugs, too good to be expunged; among the most powerful of these are elaterium, digitalis, hydrocyanic acid, and iodine; among milder drugs, spts. eth. nit., acet. ammoniæ, valerian, and assafœtida, old friends whom I would not like to part with; as also aq. ammoniæ, croton oil, and mustard, and cantharides." We have quoted this catalogue in detail, and perhaps somewhat tediously, because we think it quite as extensive a one as any modern practitioner would set down, or care to advocate; and, especially, because we were anxious to show *how far* Dr. Jackson goes beyond Dr. Holmes, in his use and estimation of "drugs—powerful drugs—noxious agents" as they are, and how much more unlikely to "throw away," cast out, and abolish the familiar apparatus medicaminum, the accumulated, perhaps profuse, material of ages.

We have a word to say, however, in passing, concerning the "presumption against medicines," as being necessarily "injurious to the sick, because hurtful to the well." It is true that many of them are disagreeable and nauseous. "Spit them out," says Dr. Holmes, following nature, as he suggests. But if nature be not always the same! To a large majority of our patients, the remedy for phthisis, at present fashionable and highly approved, cod-liver oil, is intensely disgusting. Shall "they spit it out?" The Esquimaux and the Russian esteem it a delicacy. Le Vaillant tells us that the Africans, in like manner, regard the oil from the hippopotamus as a luxury, and a valuable medicine. Every one can, from his own experience, supply similar examples of difference of taste or caprice. Nothing can be more uncertain than such a rule as this.

"A medicine, that is, a noxious agent, should always be presumed to be hurtful. It always is directly hurtful; it may sometimes be indirectly beneficial." Such is the precise phraseology of "the discourse." Is it true in any sense? Is there any meaning conveyed by it which our venerable author would assent to, or which he would be willing to be understood to sanction, when he says that he goes "with Dr. Holmes to a certain extent, perhaps as far as he does?" The whole tenor of the valuable little book before us seems rather to be exactly in opposition to, and contradictory of it, as indeed it cannot but be, conveying, as it does, the experience of a careful observer, sage thinker, and prudent practitioner. Let us examine further the terse proposition. And first, it will not be easy to find the man in full and perfect health—free as he must be, for our purpose, not only from actual disease, but from personal, hereditary, or tribal predispositions—upon whom to try the experiment of the direct hurtfulness of the noxious agent, which, when we are about to employ it for the relief of the sick, we call a medicine. When we procure such a subject we must allow for idiosyncrasy, as our first embarrassment. Some men begin the use of tobacco without a qualm, as some are never sea-sick. Next we shall discover that the influence of the deleterious substance will depend upon, or, at any rate, be prominently modified by, dose, or quantity, or concentration, or mode of presentment, or administration. No examination or analysis of it, beforehand, will aid us here; no classification, no scientific knowledge of constitution, or composition. There are but few elementary matters in nature; out of these are formed alike poisons and aliments, the difference between them being merely fractional in proportions often, and extremely tenuious. Some fungi are familiarly used as food or as condiment; others, scarcely distinguishable by the most knowing expert, and often mistaken, are terribly destructive to life; and others are exhilarating or intoxicating in a peculiar way—ascertainable only by experiment. The hemp of our Western hemisphere is inert; its congener of the East a most energetic narcotic. The chemist prepares a hydrocyanic acid of such concentrated intensity of power that the contact of an atom is fatal; as nature offers the same substance to us in many forms, we employ it familiarly to flavor our ices, cordials, cosmetics, and confectionery. From the most disgusting objects in nature we obtain the most delightful perfumes, such as we inhale gratefully from the sweetest fruits and flowers. The line is not drawn, as Dr. Holmes would have us take for granted, with any clearness, between articles possessing the most contrasted qualities; so that we can always say—here is a poison, avoid it; here a medicine, a noxious agent, directly hurtful, possibly indirectly useful, spit it out, examine the evidence concerning its ultimate influence, but remember that such evidence is extremely apt to be defective as rebutting the presumption against it: a condiment or flavoring aroma, which you may use or not, at your own taste or your pleasure: or, lastly, a food, to be sought for subsistence and nourishment. Nicotin and the oil of tobacco are most deadly, noxious agents; but a great mass of human beings employ a large portion of it every day, in snuffing, smoking, and chewing the worshiped weed. Alcohol, taken undiluted in no very great amount, will kill a healthy man; variously mixed in artificial formulæ it is most extensively administered to the sick as medicine; in diverse shapes, natural and officinal, in sickness and in health, we ourselves have repeatedly experimented with it, successfully, and, thus far, safely; and nothing in the world could give us greater pleasure than to run the risk incurred in emptying a bottle of Madeira or Champagne, or imbibing a tumbler or two of hot whisky-punch, or cool kirschenwasser in symposium with the wise, and witty, and brilliant author of the "Discourse;" whom to read is to admire, and from whose writings we never fail to receive instruction, whether we agree with him or no. It is a sad thought that everywhere men seek out narcotics to soothe and stupefy, console and comfort, and often imbrute and degrade us. We thus forget or defy our cares, and, for awhile, distract our minds from the sorrow and suffering which oppress us. But, in the mean while, what has become of the essentially and directly hurtful character of these noxious agents; poisons, medicines, beverages, aliments, cordials; all of these diverse effects so characterized depending on contingencies of quantity, concentration, repetition, and adaptation? There has been lately accumulated no small amount of evidence to show that persons in the best health may take with impunity considerable doses of arsenic—a poison, a heroic medicine, a noxious agent, often fatal in minute quantity; often energetically active in arresting the course of disease. But we might multiply indefinitely such examples.

Another class of medicines may be pointed out which are not directly hurtful in any known mode except those in which aliments are also, (as by excessive and oppressive quantity,) which still exert a powerful influence in sickness. An infusion or tincture of cinchona will make a pleasant and innocent bitter, as harmless as tea or coffee, as a pipe or cigar; a grain or two, or even five grains, of the concentrated principle resident in bark—quina—will not hurt or disturb a man in sound health. Yet the dose just named will cure, jugulate abruptly, or, if properly timed, prevent an attack of malarial intermittent fever by virtue of some obscure and incomprehensible property inherent in it. The same is less strikingly true of many articles, as salicine, cornine, piperine, diluted nitric acid, and a long catalogue besides, of which we cannot speak as poisons or noxious agents with any appropriate application of language. Here also we would refer to the list of cathartics. They meet with no favorable notice in the "Discourse;" nay, we find them included in the general denunciation of medicines as noxious agents, and "directly hurtful." They are indeed unnecessary to perfectly healthy persons, who, in civilized society, are not perhaps a very large majority. But we are too well aware that a habit of constipation is among the most familiar, and, indeed, almost unavoidable results of certain conditions of civilized life. This would become serious disease in many without the relief to be obtained from them. It is an abuse of terms to say that they are only indirectly beneficial here, or that they are in any sense directly hurtful. Laxative fruits, and beverages, and aliments are innocently used every day. Excess is always and in every regard injurious; and neither we nor Dr. Jackson, who has dwelt with force and clearness on the infinite and wide-spread benefits to be derived from the proper exhibition of this class of remedies, would defend or excuse it. Not to speak of their value in acute maladies, we know many a student, and man of business and letters sedentary under cogency of circumstances, to whom life would be absolutely unendurable but for the orange sucked in the morning, the tablespoonful of bran swallowed at bedtime, the few grains of rhubarb, or the tumbler of Saratoga water which gave an occasional and wholesome fillip to a torpid or forgetful intestine. To depend upon nature here would be to lean upon an already broken reed, and to wait would be to wait in vain; "rusticus expectat dum defluit amnis." Thus again we find Dr. Jackson's Letter strongly in opposition to the views expressed in the "Discourse" of Dr. Holmes, notwithstanding the vague declaration of general assent volunteered in the preface.

We appreciate the little book before us, because in it the long experience of its author is made available to us and those who come after us. But if experience be in itself untrustworthy, or its deductions are without proper and logical foundation, we must be exceedingly cautious not to yield our minds to his doctrines and statements. In the "Discourse" we are ingeniously taught the lesson of the ancients, "experientia fallax;" to be sure, they also told us "experientia docet," but the emphasis must be laid on the former dogma. "Medical men are apt to suppose, after twenty years' practice," that they guide themselves and perhaps benefit others by what they have learned from observation, and regard "as the result of experience;" but "much of it"—and no one can tell how much—"is no such result at all, but a foregone conclusion, based on some prevalent belief or fashion of the time." The institution of an art built upon such shifting sands must surely crumble into ruin. Nothing is fixed or steadfast. Nay, more. Let us suppose the observations fairly made and correctly reported. The testimony of Dr. Jackson is recorded in favor of certain medicines applied as remedial in certain definite diseased conditions. He infers that the desirable changes which took place in the latter, after the administration of the former, were the effects of his treatment, consequences following causes. But Dr. Holmes denounces this course of reasoning as "inveterate logical error;" "the post hoc ergo propter hoc error; he got well after taking my medicine: therefore in consequence of taking it." Forbes urges the same repudiation of the argument, and seriously proposes "to dissociate in the minds of practitioners the notions of post hoc and propter hoc." In place, however, of this habitual, familiar, and, as it would seem, indispensable mode of reasoning, they offer us no other. They suggest no substitute, nor do they tell us how we shall guide ourselves when we abandon it. We cannot say ante hoc or sine hoc—there must be sequence, undoubtedly. If a cause does not precede, an effect cannot follow. Hume maintains that this is all that we can know of the relation. Bartlett intimates that it is useless to seek beyond it. Some have imagined that we cannot be satisfied without the conception in the mind of relevancy between them; but have not determined whether this conception is instinctive or acquired; intuitive and perfect, or educational and conjectural.

To our utter astonishment, Dr. Jackson himself long ago went astray—*pace tanti viri*—on this matter. In a letter to Sir John Forbes, published in 1846 and reproduced here, page 113, he says: "I have often urged my brethren that we should never get the better of quackery, so long as we attributed the recovery of patients to medicine on the propter hoc principle—that is, propter hoc because post hoc. Our proper ground is that having studied the subject, and had personal experience, we know better than others how to direct the cure of the sick." He would propose to introduce what is denoted, in the language of Sir John, "a more philosophical and accurate view of the relations of remedies to the animal economy and to diseases." But these relations are infinitely recondite and obscure. Does Forbes or Jackson know—is it known to any one—what is the relation of cinchona either to the animal economy or to malarious disease which qualifies it to arrest and cure intermittent fever?

Post hoc, ergo, propter hoc: "there is no way but this." We must take care not to apply our method carelessly, hastily, vaguely; but when any one event is known or observed semper et ubique et ab omnibus to follow another, we have the best ground accessible to the human intellect for the belief that the second is consequence or effect of the first as cause. We would not affirm that the method is infallible, but we say that it is indispensable and inevitable. Every inference in both the "Letters"—the import of every case recited or alluded to—are predicated upon this denounced doctrine. How else are we to understand the interesting history of Dr. Jackson's first patient, Mr. Lowell, who became very ill with "cholera infantum following (post hoc) and brought about from (propter hoc) dentition, dog-day weather, and unpropitious diet;" and restored to health after and by (post and propter) Dr. Jackson's very judicious treatment with certain noxious substances (medicines) "small doses of calomel, castor-oil, or some like article," with baths and well-selected nourishment? How else did our venerable author come to be "entirely convinced that bleeding diminishes the risk of life in young subjects laboring under pneumonitis," or that "in the adult it will somewhat shorten the disease, and more certainly diminish its violence?" How else did he arrive at the "belief that typhoid fever may sometimes be arrested at once within the first three days?" How else did his old master, Dr. Holyoke, or he himself know "that women bear bleeding better in pregnancy, much better than men, or women under other circumstances?"

Dr. Holmes humorously eulogizes the "silver hoe" which "saved the colony at Plymouth." In the case of Massasoit—"typhoid fever clearly—Winslow *scraped* his tongue with this implement," judiciously and successfully. Under a like attack, Dr. Jackson took an antimonial emetic. Page 23. He got better after it, (post hoc.) Thinking—illogically according to Forbes and Holmes—that it was because of it, (proper hoc,) he "prescribed for others what he employed for himself, and came to view it as "creating almost a certainty of a speedy and safe termination of the disease, administered on the first day." But if he had not administered it repeatedly, his inference would have been worth little or nothing. We have but one cure ascribed to the "silver hoe."

Dr. Holmes asks earnestly in the "Discourse"—"Do not some of you remember that I have had to fight this private-pestilence question"—the contagiousness of puerperal fever—"against a skepticism which sneered in the face of a mass of evidence, such as the calm statisticians of the insurance office could not listen to without horror and indignation?" Aye, indeed! We do remember it well; and now recall our supreme wonder that it did not carry conviction and remorse to the minds and hearts of those who, "while discussing the treatment of the disease, were carrying the infection from bed to bed, as rat-killers carry their poisons from one household to another." It was a most admirable treatise, of clear illustration and unanswerable argument, which was, as he says, "sneered at." Its foundation was on the strong and simple ground—post hoc, propter hoc. No relations were or could be, or need to be, pointed out "more philosophical and accurate" than the unimpugnable facts of repeated sequence; the unhappy conductor, himself clean, neat, and perfectly well, traced from a sick bed to a healthy one, which soon in its turn became a bed of pestilence; and so on, again, and again, and again, until no impartial mind could fail to recognize the connection of cause and terrible effect.

This is no digression, as it may at first seem to our readers. A general indorsement of the views promulgated by Prof. Holmes is given by the revered author of the Letter before us, as quoted from its preface. Looking upon these views as really injurious to our profession, it was incumbent upon us to deprive them of the weight of authority thus lent them by partial friendship or misapprehension. We have shown, we think, that the support was apparent rather than real. In summing up "the conclusions to which we have arrived," Dr. Jackson lays down a rule which we readily accept, and which will plainly exhibit *how far he does not go* with Dr. H. "Fifthly. When diseases are brought under the treatment of a physician, after the period during which active measures are found useful, or *when such treatment has done all that it is capable of*, the expectant mode of cure should be relied on." Page 90. Then, and not till then, we add, let the physician rely on it.

A single quotation will serve to show how widely our author differs, on a most important principle of medical practice, from Sir John Forbes, whom also he eulogizes, and seems 'promiscuously' to agree with and to sustain. Forbes urges upon 'Young Physic' the injunction, "To endeavor to banish, from the treatment of acute and dangerous diseases at least, the ancient axiom, 'Melius anceps remedium quam nullum.'" This piece of advice we have always regarded as craven and truculent. What! refuse to help a poor wretch crying out in the agonies of tetanus, or convulsed with epilepsy, or in the horrible spasms of hydrophobia, because "we are not certain of an indication!" The more acute the suffering, the more dangerous the attack, the more imperatively are we called on to exert all our energies in behalf of frail humanity. Where else is our hope of progress? Slow enough, alas! with efforts pressed enthusiastically in every direction; without such efforts there could be none whatever, and we should sit down "and wring our hands in comfortless despair."

In the true spirit of the physician, Dr. Jackson forcibly declares, "I will say that, for a disease so distressing to the patient and his friends," he is speaking of epilepsy, "a drug could scarcely be named which I would not administer, if it could be done with a reasonable *chance* of success." He would not wait for "a certain indication;" would not be repelled by an ever-present doubt.

We gladly record our author's views on another topic of pressing and paramount interest. Sir Gilbert Blane, among the numerous heresies of his mis-named "Medical Logic," asserts that "the more we study, practice, and understand our science, the longer we shall find or make the list of *self-limiting diseases*." It is not easy to circumscribe clearly the meaning of this vague phrase. Even in Dr. Bigelow's pure English writing it is employed so as to include not only doubtful examples, but instances of the most chronic and unlimited and irregular duration. At present, the only truly self-limiting diseases we know, are the exanthemata. These *will* come to an end when they have run their brief course; we can neither protract nor renew any part of the morbid conditions which they manifest. Cancer and tuberculosis have no spontaneous limitation: it is hardly in our power to limit them. A fit of gout has a tendency to last about, or nearly, the same time at each period of its local recurrence; but the constitutional affection is illimitable: a convulsion terminates spontaneously in a few minutes, but neither epilepsy nor hysteria are constitutionally self-limiting. Intermittent fever has a well-defined paroxysm for every type, but, if let alone, will recur during a whole lifetime. We might make an enormous catalogue of doubtful maladies, of which it is affirmed and denied that they persist in a given course and cannot safely and efficiently be interfered with. From this long list which the expectant medicine would leave unabridged, or rather which it seems to seek to extend, every faithful practitioner delights to subtract. Typhoid fever, one of its prominent features, is confidently believed by Dr. Jackson to be liable to jugulation, arrest. We are happy to notice that our distinguished clinical Professor Flint has recently expressed a similar opinion. Dr. Jackson is also "inclined to say the same thing in regard to pleurisy, pneumony, and the similar affections; that they may be diminished in violence and *duration*, sometimes perhaps may be arrested, jugulated, by blood-letting, aided by appropriate remedies." Page 50. Of gout, he writes, page 72, "It has been called the opprobrium medici, and that the doctor could not remove it. Now, if this be said as to a fit of the gout, it is no longer true." And among his 'conclusions,' we find him expressing his 'conviction'—"Thirdly, that by medical treatment—often by the efficient use of powerful drugs, sometimes by blood-letting—we may frequently succeed in diminishing the violence, lessening the suffering, and shortening the duration of diseases." And once more, page 89—"Fourthly, I have brought into view the self-limiting diseases of which Dr. Bigelow has treated, in which certain processes must be gone through, and which medicine cannot arrest. I have stated that we can sometimes diminish the suffering, and perhaps also the danger, attending these diseases, when they are passing certain boundaries." We are glad to see here avowed a willingness to interfere even with the unquestioned members of the class alluded to, while we show above our author's sagacity in making subtractions from their alleged number.

We have had occasion incidentally to notice his position in regard to the disuse of blood-letting, and the recently exaggerated repugnance to antiphlogistic measures generally in our therapeutics. "I feel persuaded from my own observation and experience," he says, page 55, "that the use of the lancet should not be altogether abandoned. Even in the epidemic called peripneumonia notha, typhoid pneumonia, bilious pneumonia, etc., a vigorous man might be bled within the first few hours of the disease, not only with safety but with advantage." "When I began practice," sixty years ago and more! "I was not disposed to employ bleeding in any cases, especially in those of children. But finding that in them acute inflammations within the thorax were often fatal, I felt myself bound to make a trial of this remedy, which had been approved by many men of sound minds. I then tried bleeding in subjects of all ages, and the opinions above given resulted from these trials." Page 58. As a sound decision upon a practical point, formerly discussed much more than at present, we quote from page 88, "repeated small bleedings I regard as very injurious." He lays little stress on leeches and cupping, and, indeed, says little of them.

He does not add much to what we find in his former Letter on cathartics, but the advice he gives is prudent and valuable. "There is no tribe or class of medicines so much used as this. It would seem that we can hardly live without them, they are necessary; but the abuses in their use are enormous." Page 41. The truth is here fairly stated, and in the latter part of the sentence is shown how far he goes with Dr. Holmes. But the substitutes which the latter hints at, can never take the place of cathartic medicines. They are also evils: noxious, liable to great abuse, capable of inflicting much injury, and incapable, as a general rule, of compensating for the risk by any marked equivalent beneficial influences.

We have now concluded our inadequate notice of Dr. Jackson's Letter on 'the Utility of Medicine.' The appended 'notes' contain matter of much interest, most of which, however, has probably been for some time in the hands of our readers. No American can peruse without deep feeling the 'Memoir on the Sickness and Death of Gen. Washington,' or the article concerning Mr. Prescott; upon which we forbear to offer any comment. We have made some allusions above to the case of Mr. Lowell, the subject of the first 'note;' and will merely refer to the third as a simple and kind eulogy of the excellent Rebecca Taylor, who well deserves the fame she is doubtless surprised to have obtained from the pens of Drs. Jackson and Holmes.

Nothing, then, remains but to congratulate our readers on the addition to their libraries of this estimable little volume, and to offer our sincere thanks and most cordial regards to its honored and venerable author. May he yet live long to enjoy the respect and affection of all who know and of very many who never saw him.

ART. IV.—*The Transactions of the American Medical Association.* 1860. Vol. xiii. pp. 930.

IN looking over the thirteenth volume of the *Transactions*, our attention has been directed by a natural predilection to the papers read before the Surgical Section. We commenced reading with the anticipation of great pleasure, and ceased with the realization of great dissatisfaction. We felt deep regret that such productions, replete with bad English, vanity, and unfounded statements, should bear the impress of the Association. Our regret is more deeply felt when we consider that the volume is issued under the sanction of the body of the profession of our country, will be read by the representative men of science beyond the Atlantic, and will be placed in the libraries of medical associations in Europe as the exponent of American medical science in so far as it treats.

The first paper, entitled a "Report on the Various Surgical Operations for the Relief of Defective Vision," by MONTROSE A. PALLEN, M.D., of St. Louis, Missouri, is in itself exceedingly defective, treating of but a part of the operations, as those for anchyloblepharon, symblepharon, trichiasis, entropion, ectropion, and strabismus. It is true, a terminal note by the writer announces that for want of space the consideration of glaucoma, artificial pupil, and cataract will be deferred for another occasion. A poor excuse is better than none, unless it be, as in this case, so extremely poor that it is shadowless. Who limited the space? When appointed to report on the subject, was the writer informed that his paper must not exceed sixty pages?

Had the writer properly appreciated his duty and confined himself to a report on the various operations, instead of writing a treatise on the affections requiring these operations, sixty pages would have been ample space. In introducing the subject of strabismus, for instance, *seventeen* pages are devoted to the literature, etiology, and diagnosis of the disease, and *fourteen* to the operations, the writer stating that he finds it "absolutely necessary to consider the literature and pathology," and yet makes no use of such consideration in presenting the operations.

We do not dispute his assertion that he found such consideration necessary *for himself*, but we deem it quite unnecessary to have quoted page on page from the text books in reference to the diagnosis of strabismus, or matters of that kind, in order to report on the operations. It may be as well, however, that only so much did appear, for nothing new or noteworthy occurs in the "Report" thus far, and that in exceedingly bad taste. One would suppose the writer believed Mr. Macdonald the columbiad of ophthalmic literature, for he follows his miserable running glossary style.

It is indeed painful to read sentences so filled with brackets, French synonyms, and such like peculiarities, as for instance, "with the forceps, (*pinces à griffes;*)" and again, "an elevator, (*refouleurs,*)" etc., as if that made the matter more plain and intelligible. Such things in writing are, to say the least, in very bad taste.

As to the correctness of the use of the language in which it purports to be written, read on page 411. After stating that the patient was prepared for the operation for strabismus, he says: "The muscle was then divided with the scissors after the conjunctival wound was made, and it (the muscle) had been drawn out by means of a blunt hook." Now what would the reporter think of a surgeon, who, describing an operation, the amputation of a limb, for instance, should say, the tourniquet having been applied and the patient made ready, the bone was then divided with the saw after the incisions were made in the soft tissues, and it (the bone) exposed by means of a retractor?

Again, on page 412, describing the procedure of another surgeon in a like operation, is written, "a curved bistoury, (on its axis,) the cutting edge upon the concavity, the point small and heel broad, is then inserted under this cordiform fold and is made to cut its own way out through the muscle, tendon, fascia, etc. etc." Can a bistoury be curved other than upon its axis? Is *small* the opposite of *broad?* In operating for strabismus, would the surgeon cut both muscle and tendon? and after dividing the tendon, fascia, and one "*etc.*," where and what would the other "*etc.*" be?

In speaking of the procedure of Guérin in operating for strabismus, he says: "This plan is peculiar and ingenious: special instruments are necessary, which are three double hooks, (*érignes,*) a conjunctival perforator, (lance-shaped,) double edged and slightly curved on the flab; a Z-shaped myotome, concave on the back, convex on the edge, and elbowed, with its handle, (bayonet-shaped.)" All must fully understand so lucid a description as is thus presented. If a few more brackets had been interspersed, the reader would have been much assisted.

But such matters are of minor importance compared with practical points, and in consideration of them we pass to the concluding paragraphs of the paper in which they are all summed up, as follows:—

> "As numerous and ingenious as are the various operations for strabismus, (many of which have been crowded out of this paper for the want of space,) it is surprising to see the number of successful attempts, and for this reason makes it the more difficult to determine as to the superiority of any one method.
>
> "In order to decide as to the merits of the best operation, it is well to once more understand that strabismus is an alteration of the mean length of the opposing muscles, whatever may be the cause of that alteration, whether it be a

change in the structure of the muscle itself or a real insertion of its tendon. After an operation for strabismus, generally, if not always, the attachment from cicatrization takes place posterior to the normal insertion; hence, to obtain a correction of the position and in proportion to the amount of deviation, the tendon must be divided farther back in such a ratio as will so induce the rectification.

"Thus, when the strabismus is but slight, the tendon should be divided as near the sclerotic as possible, and the wound in the conjunctiva should be but small, which must be united by a suture, and in proportion to the deviation, so will be the division from the sclerotic.

"The above remarks being premised and without an explanation which would not be out of place, I take the liberty of suggesting that the procedure of Mr. Critchett, *with the addition of a suture in the conjunctival wound*, is decidedly the best for such cases as present a less deviation than two lines from the central axis of vision; and that of Walton, superior to any of the others for such cases as present a greater deviation than two lines."

We here find several remarkable ideas presented, wherein grammar, physiology, mathematics, physics, and pathology are sacrificed. Let us query concerning them. Why should an operation be unsuccessful because ingenious? Does the writer mean the "merits of the best," or of all operations as to which may be the best? Is strabismus the alteration of the mean length of the opposing muscles? If of two muscles one be one and a half and the other one and a quarter inches in length, would not their mean length be one and three-eighths inches? and if one become contracted to one inch and the other relaxed to one and three-quarter inches, would their mean length be altered? Do we meet with but two causes of strabismus, one "a change in the structure of the muscle itself," and the other "a real insertion of its tendon?" What does the writer mean by *a real insertion* of a tendon? Do we ever have artificial insertion? Would a true, actual insertion of a tendon produce strabismus? On what system of philosophy is founded the idea that the eye is more freely liberated by dividing the tendon of the contracted muscle at a distance from its insertion proportionate to the extent, not "amount," of deviation? If an ass be tied to a post and the halter break near the head-stall, will not the animal escape just as freely as if it broke at the other end?

We see in the concluding sentence of the paper that the writer comes down to mathematical rules in applying to practice the procedures of Critchett and Walton. Now let us have the true mathematical guide in the application of his doctrine. Shall it be this?

If the deviation be but one line from the axis of vision, the tendon should be cut close to the sclerotic. If the deviation be two lines, then the tendon should be cut two lines from the point of insertion. If the deviation be three lines, then the tendon should be cut at the distance of four lines, and so on until we find the deviation of six lines, when the muscle should be divided ten-twelfths of an inch from its point of insertion. Why not?

One more query. What is the "*central* axis of vision"?

But enough. We are by no means pleased in reading a paper in nowise answering the anticipations of the subject.

The next paper in sequence is entitled a "Report on the Improvements in the Art and Science of Surgery in the last Fifty Years." By JOSEPH N. McDOWELL, M.D., of St. Louis, Missouri.

This paper is possessed of no qualities which entitle it to the considerations of a review or even notice. It is filled with inaccuracies, garrulity, vanity, and vulgarity.

We now come to the third and last paper, entitled a "Report on Morbus Coxarius or Hip Disease." By LEWIS A. SAYRE, M.D., of New York City. We consider this a peculiar title for a paper to be read before a scientific body. There is seemingly a design in this, for very few lay people seeing the paper in pamphlet form would understand the signification of morbus coxarius.

As this subject is one of great importance, and the purport of the paper of such a character, we have seen fit to examine more fully into it than into the previous ones. We have seen it stated in some notice of the report, that it is characterized by "directness, clearness, simplicity, and truth." We shall leave the reader to judge for himself whether such are its characteristics, after directing his attention to certain points, as follows:—

The writer introduces the subject by saying that it will be necessary for him to give a brief description of the most important anatomical structures entering into the composition of the hip-joint, in order that there may be a proper appreciation of the pathological views entertained in the report, and that the reader may fully comprehend the principles which he shall endeavor to establish as the proper basis of correct treatment.

There are but few diseases upon whose pathology much light is shed simply by descriptive anatomy, and here, in a malady whose pathology, symptoms, diagnosis, and treatment are based on such wide correlative circumstances, the writer gives but the plainest, most commonplace anatomy of the joint, at no time referring to the *anatomy of textures* which bears so important a part when considering the structures entering into the formation of all joints, in a pathological point of view. To give anything like an anatomical basis for pathological and therapeutical views as relates to hip disease, the whole apparatus of locomotion in the region should be described, together with the vascular system and nervous distribution of the parts.

From the anatomical introductory, we are led to the chapter on *causes*, in which the writer commits a graver error than that portion of the profession whose views in relation to the origin of the disease he positively condemns. Utterly discarding that well-grounded idea that morbus coxarius is of strumous origin, he affirms that, with but few exceptions, direct traumatic influence is the cause. The writer evidently draws no distinctive line between morbus coxarius and other affections of the hip-joint. But how does he prove his assertion, and attempt to disprove the established doctrine? Read the following:—

> "Most practitioners will admit with me that they never succeeded in curing hip disease by an anti-scrofulous mode of treatment. To be sure the term scrofulous has essentially changed in its application within the past few years, and so has the treatment. Formerly, antimonials, the mercurials, and the iodine preparations and bark were in vogue—to-day, air, exercise, and generous diet are the chief remedies against this disease; but neither has cured morbus coxarius. Then derivatives were introduced extensively in order to eradicate the dyscrasic poison. The results have been equally unsatisfactory. In fact, whatever remedies were resorted to, morbus coxarius was never relieved thereby. It took its course to a spontaneous cure, or else to a fatal termination.
>
> "Not until more attention had been paid to the *local treatment* of the disease have we had any satisfactory results. This fact alone should indicate the errors as to the nature of the disease formerly entertained. For it could hardly be asserted that a constitutional disease could be effectually relieved by merely local treatment. * * * * * * *
>
> "And, again, experience teaches that no disease is capable of inflicting greater constitutional disturbances than affections of the bones or joints. Often have I seen phthisis of the lungs superadded to such cases in previously healthy subjects, etc.
>
> "It seems, therefore, that the inevitable effects of the disease have been mistaken for its causes, that the attenuation of the patient, his anæmia, his vitiated nutrition in all respects, have been construed into previously existing scrofulous cachexia, originating and characterizing the disease; whereas they were consecutively developed by it, and were therefore results and not causes of the disease."

We deem these arguments extremely weak. So impressed with the non-strumous theory is the reporter that he admits but one construction and allows room to but one idea, and because means can be used to remove a certain amount of irritation, those means alone are curative; and because they relieve, we are all mistaken as to the nature of the disease. Equally ungenerous are his conceptions declared in the second quotation, himself completely transposing cause and effect, and admitting no exception, because he has seen phthisis supervene on hip disease.

Read now the following as to the examination required to ascertain the cause of any given case:—

> "It requires generally a very close examination to find out these causes, since the disease does not usually immediately follow the injury, but often commences or manifests itself weeks and even months after the accident, so that the patient and his friends naturally forget the accident and its connection with the disease, until specially reminded of it in the investigation."

If, now, we take this groundwork for our doctrine, then we must bow to the anti-strumous theory. Most cases of morbus coxarius occur in children. Would it be possible to find a child that had not fallen or met with some injury within any given number of weeks? Now, if morbus coxarius become developed, the injury was the cause, according to the reporter. It seems that he, in his ardor to support the theory, makes no distinction between vital and exciting causes. The cachexia exists, we believe, and but awaits an opportunity for exhibition afforded by exposure, injury, or otherwise.

The *symptoms* are next discussed, and the opening sentence corroborates our declaration that the author of the report draws no distinctive line between morbus coxarius and other affections of the hip-joint, for he says: "The symptoms of this disease vary according to the different stages in which we find it, and the *character of the inflammation*, whether it be acute or chronic, *rheumatic*, *strumous*, or *purely traumatic*." The italics are our own.

In proceeding to give the symptoms, he makes a division according to the three stages of the disease. Passing without comment over the first division, we enter upon an examination of some of the points under the head of the—

> "SECOND STAGE.—This inflammation, unless arrested, will readily produce effusion, and if this be of much amount, it will produce a *peculiar* deformity, viz., an *apparent* elongation of the limb; *eversion* and abduction; flattening of the natis; the rima natis on the diseased side being lower than on the sound side; flexion of the thigh on the pelvis, and the leg slightly flexed upon the thigh. If the effusion be excessive, or the inflammation acute, you will have an *apparent* anchylosis, caused by muscular contraction, which is an involuntary act," etc. * * * * * * * *
>
> "The flexor muscles of the thigh, the tensor vaginæ femoris, the pectineus, and rectus femoris, are so firmly contracted that the whole pelvis moves on the opposite acetabulum," etc. * * * * * *
>
> "This rigidity does not depend upon true or bony anchylosis; for by division of the flexor and adductor muscles, or by puncture of the joint, you will have free motion of the limb, showing that there has been no bony anchylosis.
>
> "That the mere presence of liquid in the perfectly closed joint is capable of producing, and therefore *accounting for the said immobility*, is clearly demonstrated," etc.

Here we find an anomalous condition of things. We have effusion producing all the deformity and marked superficial symptoms, and also flexing the leg on the thigh, and the thigh on the pelvis; and, if excessive, even an apparent anchylosis, which is *also* caused by muscular contraction. We, moreover, find the individual muscles named which produce this seeming anchylosis by their firm contraction. Let us see what the associated action of these muscles is. They *flex* and *adduct*, and, putting on firm contraction, flex the thigh firmly or completely upon the body. Then, how do they produce immobility, acting in only one general direction? And when these muscles which *flex* and *adduct* put on such firm contraction, how is it we get *apparent elongation*, *eversion*, and *abduction?* But let us go a little further; we may be informed. It is next declared, as we see above, that this immobility can be relieved by a division of the flexor and adductor muscles. We do not see any smoother sailing here. Why should the *adductor magnus*, *longus*, and *brevis* with the *gracilis*, be cut, when the *pectineus* alone of this group is contracted, and the division of the rectus and tensor vaginæ femoris, which are contracted, be neglected? It is declared that these muscles produce, by their contraction, this apparent anchylosis, and yet the concluding paragraph of the last quotation asserts that it is clearly demonstrated, *that the mere presence of liquid in the perfectly closed joint is capable of producing, and therefore of accounting for the said immobility.* This whole matter seems to be considered in a very careless manner, totally regardless of connection, giving no evidence of appreciation of the true state of the case.

Under the *third stage*, in speaking of the escape of the effusion by rupture of the capsule, it is written that "this change from the second into the third stage is sudden when the opening in the joint (query, *joint* or *capsule?*) is large," etc., or gradual, if the opening be small or fissure-like. I have seen the former take place in a night, and the latter require weeks until the change was accomplished. Here we have that all-sufficient cause of all the symptoms of the second stage, effecting by its escape a most wonderful change. But it is less wonderful than the superior insight of the reporter into the workings of nature as disturbed by this disease. Through the thick surroundings of the hip-joint he sees with ease the magnitude and form of the opening through the capsular ligament, and marks the time of rupture, though the result be not effected for weeks. All other causes for the change of deformity are drowned in *effusion.* The cause of the deformity, according to the writer of the report, depends "upon muscular contraction and twisting of the pelvis." We will contrast the bearings of this remark with previous quotations and the following partial table of symptoms found on page 477.

SECOND STAGE.	THIRD STAGE.
Limb (apparently) longer.	Limb (apparently) shorter.
“ abducted.	“ adducted.
“ everted.	“ inverted.
“ flexed in both joints.	“ flexed in hip-joint only.

It will be remembered that, in speaking of the deformity of the second stage and the symptoms as here tabulated, the writer of the report says that effusion is the cause, and that there is an immobility produced by muscular contraction. In the third stage we have immobility from muscular contraction and an exactly opposite deformity. If the effusion produces all the symptoms of the second stage, how is it that as soon as the effusion escapes, the limb, instead of assuming its previous position, passes into a directly opposite one? In the second stage, according to the author of the report, the flexor muscles of the thigh, the tensor vaginæ femoris, the pectineus, and rectus femoris are the muscles implicated, giving eversion and abduction contrary to the known action of these muscles. The deformity of the third stage is directly opposite and is produced by muscular contraction. Now, if the afore-named muscles produce the abduction and eversion, what muscles produce the adduction and inversion? Though so definite in naming the muscles so firmly contracted in the second stage, no mention is made of the agents of the deformity in the third stage.

The remainder of the chapter is devoted to the labor of demonstrating the theory, that dislocation never occurs in the disease under consideration. Having predestined his mind by the following declaration, "the peculiar change that takes place, in many instances, upon the rupture of the capsule, in all the symptoms, and the suddenness of the occurrence have led to the *false idea* that a *luxation had taken place*," the writer, in his enthusiasm to support his idea, confounds heads with shafts, and, because a capsular ligament remained unruptured, declares that luxation had not taken place, though the head of the femur rested on the dorsum ilii, as here quoted:—

> "*The head of the femur was lodged on the dorsum of the ilium.* The capsular ligament and synovial membrane were much dilated, and at the superior part their *attachment to the bone was thrust upwards*, so that, *although the head of the femur was no longer in the acetabulum, it was still within the cavity of the joint.*
>
> "Here we have the testimony of Sir Benjamin Brodie, that '*the head of the femur was lodged on the dorsum of the ilium*,' and in almost the next sentence, he says, '*it was still within the cavity of the joint.*' Comment, it seems to me, is unnecessary, for this cannot be called luxation, according to the ordinary definition of that term."

And, again, on the same page, referring to Mr. Skey, we read, "the left femur was dislocated on the dorsum ilii," etc., and, stating that an operation for its removal was determined upon, he quotes, as regards the condition or actual state as observed at the time of operating, as follows: "The head of the femur had been entirely absorbed," etc. The reporter then says: "I would simply ask how it was possible that there could have been a dislocation on the dorsum ilii, if the head of the femur be entirely absorbed? Can a bone be luxated when it has no existence?"

Now let us simply ask, in the first place, must a capsular ligament be ruptured to perfect a luxation? If called to see a patient with all the symptoms of a dislocation present, would the writer cut to ascertain if the capsular ligament were ruptured before pronouncing it a dislocation? Mr. Skey says "the femur was dislocated," and the head absorbed. Does the femur disappear on the absorption of its head? Does it not still exist? If the head be absorbed, does the femur remain in its normal relation, distance, etc., with the innominatum, or is it dislocated for lack of support? If the writer hopes, by such evidences, to sustain his views and stands to so explicit a definition of luxation, he would do well to observe greater care in his own expressions than to say as he does, "instead of a luxation of the hip, we have in fact," mark the words, "a luxation, or rather a displacement of the acetabulum itself."

In bringing the consideration of the *third stage* of symptoms to a close, the writer describes and gives an illustration of a specimen for which he acknowledges his obligation to Dr. Carnochan. The specimen we well recollect, having seen and examined it when it was presented before the N. Y. Medico-Chirurgical College. We remember, too, the discussion which arose, some averring it to be the result of other than hip disease, Dr. Carnochan himself, who presented it, being unable to give any history of the case. In reference to this case, the reporter goes on to state, as follows:—

"This was a case of hip disease of nearly three years' standing, the result of an injury in a previously good constitution, and the disease progressing so insidiously that the patient did not apply for treatment to any surgeon until it had arrived at its third stage, when it was mistaken for dislocation, and so diagnosticated by all who saw it; and yet the *post-mortem* revealed the fact that the capsular ligament had never been ruptured, but still contained the head of the femur which had never been out of it.

"This case was not brought to the city until he was almost in a moribund condition, and then the gentleman who saw him, and who is one of the best surgeons in this country, mistook it for a luxation upon the dorsum ilii, and presumed, from the careless manner in which the history of the case was detailed, that it had occurred at the time of the accident more than two years before, and as it was a hopeless case nothing was proposed for it. I never saw the case until after death, when, upon making careful inquiries among his friends, I found that the limb had been in its present shortened position only a few months, but previous to that it was as they 'thought much longer and more crooked in the knee, and a great deal more painful, and since his leg had become shorter he was much easier of his pain, but his constitution run down so fast they feared he would die,' and therefore brought him to the city for relief."

On the 28th of March, 1861, at a meeting of the N. Y. Medico-Chirurgical College, Dr. Carnochan called attention to the fact that he, at a previous meeting, presented a specimen exhibiting the ravages of disease in the hip-joint; and, moreover, that the case was wholly involved in obscurity, as he stated at that time, and yet, in a pamphlet he held in his hand, entitled a "Report on Morbus Coxarius," by DR. LEWIS A. SAYRE, reprinted from the *Transactions* of the Amer. Med. Association, the writer had given details and particulars of the case which he was wholly unable to account for, inasmuch as the specimen was taken from the "Dead-house" at the State Emigrants' Hospital under his own charge, and no history accompanied the case.

Under the chapter on *diagnosis*, the report presents some valuable differential facts in tabulated form taken from a lecture of Dr. Bauer. Other than this, the remarks are meagre, being confined to a consideration of the differential symptoms of morbus coxarius and sacro-iliac disease.

We have thus reached the chapter on *treatment*, on the examination of which we enter with some hesitation on account of the disregard of the reporter for physical laws, physiology and pathology.

We find Dr. Sayre dividing the treatment, according to the stages of the disease, into three parts, and, commencing with the first, he says: "But the most important of all, and upon which all prospect of success will depend, is rest of the joint," to which we all without doubt give assent. Before leaving the consideration of the first stage of treatment, forgetful that motion and rest are antagonistic in their natures, he says that he was led to contrive some plan to remove pressure from the synovial membrane, "and, at the same time, permit motion of the joint, thereby retaining the capsular ligament in a healthy condition, *for motion is just as essential to a joint as light is to the eye;* it is *in fact its physiological function,*" etc., with the most careless lack of consideration of the difference between a healthy joint and a diseased joint, or a healthy eye and one with retinitis. Does the reporter treat inflammatory affections of the eye, by keeping the patient in a light room, or reading by gas-light, because it is the "physiological function?"

In the *second stage* the reporter makes use of the same means as in the first stage, but seemingly for a different purpose; why, we have yet to learn. After giving some directions as to the local treatment, he advises slight but permanent extension "to relieve the pressure from the ligamentum teres." In the first stage he used the same means to remove "the pressure from the synovial membrane." Our knowledge of physics would lead us to the conclusion that the more we drew from the ligamentum teres the more pressure it would suffer. And when we consider, too, that the cavity of the joint is filled and the capsule distended with fluid, extension certainly but increases the pressure upon both the synovial membrane and ligamentum teres. It is rest that relieves the symptoms, and not extension.

Passing in further consideration of the treatment of this stage of the disease, the writer presents us with something new. In speaking of puncturing the joint to evacuate the contents, he says: "In removing this intolerable hydrostatic pressure, I simply imitate nature," etc.; and again having entered upon the third stage of treatment, referring to the same matter, he says: "In the former the lymph escapes into the cellular tissue, spontaneously relieving the hydraulic pressure of the joint," etc. Here we have a new feature in physics. Hydrostatics and hydraulics in a peculiar relation to pathology! A new and singular application of two words, of entirely different signification, to describe one condition, and both words so inappropriate, it seems hardly credible that they could have been used, seeing that their signification is utterly contrary to the idea desired to be conveyed.

The writer's grammar is equally defective in other places. Read this: "The general attitude was partially recumbent on the right side and semiflexed." The reporter should bear in mind that "attitude" is an expression of posture indicative of some emotion, and that, when used in connection with "recumbency," it is totally at variance with a proper use of the English language. A patient so much cast down and crippled with morbus coxarius as in the case he describes, would make a sorry picture *attitudinizing*.

On page 523 we read, "placed into the well-lined wire breeches." It was not our intention to say anything about this apparatus, and we should not, had the writer preserved a deference for the rules of the English language. "The" is decidedly definite, and as we have seen nothing as yet in reference to an apparatus that was "*well lined*," we suppose something new is to be presented. The "wire breeches" of Dr. Bauer are as different from the apparatus of Dr. Bonnet, of Lyons, as the straight splint is from the double inclined plane, although the reporter refers to them as being one and the same thing. What "the well-lined wire breeches" are we do not know.

Such matters are, however, of slight importance, indicative only of the carelessness with which the Report has been written. Of much greater importance are the following, which we find uttered while discussing the exsection of the head of the femur, and its results:—

"According to my personal observation, the intermediate substance is formed of very firm fibrous structure, which in a comparatively short time acquires the firmness of whalebone, or at any rate a sufficient mechanical strength for the support of the patient.

"The lower extremity of this intermediate substance is invariably and intimately connected with the femur, and the more closely so if the periosteum has been saved at the time of the operation; it is also connected with the surrounding soft parts, whereby it acquires additional strength; but is not *directly* attached to the ilium, but seems to form an artificial articulation.

"*Having had no opportunity of a post-mortem examination of an articulation of this kind in the hip, I am unable to give a detailed description of its anatomical construction.*"

The italics are our own.

Here we see the exact condition of the parts, the anatomical character, and the points of attachment and freedom of the new material, given with the confidence of an anatomist after having made a hundred post-mortem examinations, and, as he says, according to his personal observations; and yet the next sentence declares that he never observed it, for he never made a dissection of an articulation of this kind in the hip.

We have but one more matter of the kind to present before we proceed to review the mechanical treatment of morbus coxarius, as presented in the paper. Speaking, at page 532, of an operation he performed for the removal of the head of the femur, and stating that there was a retention of matter, he says:—

"And in order that it might have a free escape, I therefore with strong forceps divided the ilium and ischium at the outer border of the acetabulum, and the ischium and pubis at the inner, and cut out the *entire plane* of the ischium almost to the tuberosity; it was entirely denuded of periosteum on both sides, and only had attachment at the insertion of the ligaments. I also removed the upper and outer border of the acetabulum, and almost the entire body of the pelvis."

Here we have another instance of the writer's unbounded expression. What is the "entire plane" of the ischium? · Why, after removing so much, did he also take away "almost the entire body of the pelvis?" Were both innominate bones diseased? Was it double morbus coxarius? Will not the reader conclude that the matter had pretty "free escape" after such an operation?

We have now to consider the *mechanical* features of the treatment, concerning which we, with many others, give acquiescence to a certain extent; but not to the exclusion of all other means. On page 488 we find the first mention of instrumental or mechanical appliance, by reference to the wire apparatus of Dr. Bonnet, the pulley and weight of Sir B. Brodie, the straight splint of Dr. March, and, in the reporter's words, "the instrument I have devised." Continuing, on the same page, we read: "It was in consequence of this accident occurring in several instances that I was led to contrive some plan," etc. On the next page: "for a full description of my instrument;" and again, on page 513, "treated without division of muscles with my splint;" and in like manner in various places mention is made of the instrument. On page 495 we find the following: "I only suggest to assist nature in effecting this spontaneous cure by mechanical appliances;" and again, on page 500, we read: "and at the same time, the superiority of the plan I have suggested."

These quotations carry to the mind of the reader but one inference, and that is, that the writer of the report first suggested the treatment and devised the instrument, for he positively declares it. Let us see for a moment what this instrument is, and who devised it. To do this, let us turn to page 499 where the details of a case commence, in the reading of which we arrive at a seeming solution. On page 507 we read a description of the instrument which is, as we have seen, called his splint; and we find it to consist of a steel strip, with means of attachment for extending and counter-extending bands, the latter of which is of rubber tubing. The writer goes on to give the directions as to the proper manner of applying the instrument, the style of applying the plaster, bandage, etc. But preceding it all, we find a plate introduced, under which is printed "H. G. Davis's Splint for Hip Disease, as manufactured by Otto & Reyndors, 58 Chatham Street, N. Y., since 1855," five years ago, accompanied by a full description, and the proper manner of applying it, and the style of applying the bandages, plaster, etc. The one is just like the other; there is not a single difference in any essential point, and all the directions, as given by the author of the Report, are the same as those of the inventor of the original instrument, from whom the reporter learned the use and application of the instrument, as noticed in the quotation on the next page. Seeing this, we are led to examine a little more closely, and we find, on page 505, that in November, 1859, a patient came under the care of the reporter, and he desired to make extension of and still keep up motion in the affected limb, but was unable to do it. How he succeeded at last will be seen by the following:—

> "He returned to the city under my care in November, 1859, much improved, but with imperfect motion, and I observed that he always had more or less pain for one or two days after the motion had been applied, which I thought was owing to the fact that I could not keep up *sufficient extension while I was applying the motion.*
>
> "This was a desideratum I had tried long to accomplish, but never succeeded to my satisfaction until Dr. H. G. Davis, of this city, applied to him one of his instruments, which answered the purpose admirably, and in its construction embraced the very principles I had so long sought to obtain.

"As Dr. Davis is, I believe, the first person who has constructed an instrument embracing these important advantages—extension with motion—I have taken the liberty of presenting a plate of the same, and his own remarks in regard to its method of application. I have made, as I think, some very important improvements and modifications of this instrument, which I will describe more fully hereafter."

After the description of Dr. Davis's instrument we find the following:—

"This instrument of Dr. Davis was applied in this case with the happiest results for a few days, but it soon began to excoriate the groin, and the method of extension was not satisfactory, and could not be controlled at will, but would be either too feeble or too severe, and I therefore constructed an instrument embracing all the principles in this, but much more effectual in its application, more comfortable to the patient, and entirely under the control of the surgeon."

We see here that the reporter found that there were certain matters connected with the instrument which he thought could be improved, and the first thing was the perineal band, and he therefore made use of India-rubber tubing, which he declares will not excoriate the groin, as follows:

"This catgut is attached at either end of the perineal or counter-extending belt, which is made of thick India-rubber tubing, and, being firmly secured at either end, makes an elastic and comfortable air cushion for the perineum, and will not excoriate or chafe the parts."

And again—

"I find by the use of the India-rubber tubular air cushion, there is no danger of excoriating the groin."

As far as the India-rubber tubing goes, and the possibility of its acting as an air cushion, there is a great deal of fallacy. The moment the tubing is put upon the stretch and pressed against the perineum it becomes collapsed upon itself, and acts as a plain flat band of rubber, than which there is nothing more productive of excoriation. Facts are stubborn things, and chafe sometimes worse than perineal bands of any make or material.

But enough of this. The experience is scarcely more marvelous than that indicated in the next quotation.

"The perineum becomes accustomed to the pressure in a few days if it is not too severely applied at first, and the patients begin to run around with ease and comfort, after which it is impossible to persuade them to abandon it, even for some time after they are entirely cured. At least this has been my experience."

Let us examine into this a little. The first use of the instrument dates December 3d, 1859. The Report was presented to the American Medical Association on the 7th of June 1860, that is, just about six months after.

The quotation indicates plainly that within six months, and indeed a much shorter space of time, morbus coxarius is "entirely cured." He says plainly enough that such has been his experience.

The temptation is strong for us to query a little here and make still further contrasts, but we forbear; and, leaving this part of the Report, undertake an examination of the concluding chapter on exsection of the head of the femur, as presented under the head of "*Remarks*" on page 534.

Giving a history of the operation more or less correctly, he mentions certain cases as regards dates and the success or fatal results, and then says:—

> "In this country this operation seems to have attracted but little attention until I published my first case in the *New York Journ. of Med.* for January, 1855, and which is condensed in this Report, (No. 38.) This was the first successful case operated upon in this country, and I thought at the time, the first time the operation had been performed here; but I afterward learned that Dr. Bigelow, of Boston, had performed it a year before, but had not published the case. Dr. Bigelow's case terminated fatally on the twelfth day; mine is therefore the first successful case recorded in this country." * * *
>
> "I have heard that Dr. Parkman, of Boston, exsected this bone in 1853, but have been unable to obtain any particulars of the case."

Refer now to the table and see Nos. 32 and 33, where both cases are given, and this very case of Dr. Parkman reported with "particulars" as a "perfect recovery." How can the reporter's operation in 1854 be "the first successful case recorded in this country," when, by referring to the *American Journal of the Medical Sciences*, Dr. Parkman's case will be found recorded, as also Dr. Bigelow's—one in the July number, 1852, and the other in the April number, 1854?

Proceeding, we find the following on page 536:—

> "By a careful examination of all the fatal cases, and the cause of death as far as given, I have been unable to trace a single instance in which the operation could be ascribed as a cause of death."

Mark the words—"I have been unable to trace a single instance," etc., and yet read the following:—

> "*Textor's Second Case.*—Gangrene of the wound took place, and the patient died on the fourth day.
>
> "*Hawkins's Case.*—Died on the third day; although his patient was very much exhausted, she suffered but very little from the operation, and was much relieved and improved for two days.
>
> "*Roux's Case.*—Died on the seventh day from secondary hemorrhage, the rough section of the femur producing slough of the femoral artery.
>
> "*Kinlock's Case.*—Died in thirty hours. No particulars given." (Kinlock himself says, in the *Charleston Medical Journal*, May, 1857, that reaction never properly took place.)

> "*Esmarch's Case.*—Died on ninth day, of pyemia.
>
> "*Langenbeck's Case.*—On the eighth day, of phlebitis and metastatic abscess.
>
> "*Fock's First Case.*—On the thirteenth day, of pyemia.
>
> "*Fock's Third Case.*—Died on fourteenth day, of phlebitis and metastatic abscess.
>
> "*Hancock's Case.*—Did well for eight days, when erysipelas supervened, of which she died.
>
> "*Kuhn's Case.*—Died on the sixth day; but the caries involved also the sacrum and ischium."

We are not aware what the reporter considers to be the necessary concomitants to make an operation the cause of death. The cases as quoted from the Report certainly seem to have been hurried on to dissolution by the operation. If the author of the Report requires the patient to die on the table to mark the operation as fatal, well and good for him, perhaps, but not acceptable to us. Most certainly death following thus speedily and from causes as quoted, produced by the operation, must bear as adversely in its application to exsection of the head of the femur as if in relation with any other operation.

We now turn to a consideration of the "table," concerning which, on page 535, the reporter says as follows:—

> "In preparing the following table regard was had to exsection in morbus coxarius only, as it is in reference to this particular class of cases that we wished to estimate the value of the operation."

In an examination of the cases it is not our intention to detail all the errors, but simply to call attention to the more prominent points of an erroneous nature, they being sufficient to characterize the Report for unreliability.

In the first place, Case 1 is a case of spontaneous separation, by the reporter's own showing. So is Case 41, (see "Lehre von den Blutigen Operationen," etc., von B. Gunther, 1856, p. 203,) and such will be seen is the character of Case 69, by reference to authority. Such cases, the author of the Report says, do not belong to exsections, and on that account he puts aside the cases of Kluge, Batchelder, Vogel, Schlichting, and others. It will be seen, too, that Cases 4, (see Lond. Lancet, Am. Rep., vol. vii. p. 384,) 6, (see ditto,) and 11, (see Arch. Gen. de Med., 4me Serie t. xv. p. 549,) were not for morbus coxarius. Case 4 was a case of fracture; Case 6 was a case of caries of the trochanter; and Case 11 was an operation by M. Maisonneuve for anchylosis, after the manner of Barton.

Chronic rheumatism certainly cannot be called morbus coxarius, and under such a classification we must place 23, 57, and 97, as will be seen by referring to the authorities whence they are derived.

We have therefore to cut off *nine* cases at one sweep. Is this all? Let us see. Upon further examination, we find Case 18 is a repetition of Case 9; that Case 16 is none other than Case 15; that 52 is repeated in Case 65, and that 60 and 89 are one and the same. In plain terms, *four* cases are thus made to count *eight.*

This diminishes the total of cases tabulated by *thirteen,* and instead of 110 cases there are left but 97. It would seem almost a pity to cut off any more, but 25, 50, 51, 90, and 93 are presented without authority, and, therefore, in performing our operation of exsection, we find it necessary to gouge out more dead matter and thus remove *five* more cases, and so leave the total at 92 instead of 110 cases.

Our whole purpose is effected by the preceding; but we desire to call attention to a few other points in error, and, in conclusion, modify the "Recapitulation." By reference to the table great variability is seen in the tabulation, some cases being given in full, while others are presented in such an imperfect manner that we should be justified in cutting them off in a thorough criticism. Thus, for instance, Case 19 is presented with only the sex, result, year, and name of the operator, without any authority, while the table is arranged for *nine* facts. Gathering around us our cloak of patience, and observing other points, we find in Case "2" *fourteen* given as the age, when the patient was but eight years old. In Case "17" we see it reported as "wound closed well," and that he *recovered,* when the real case was, "has to a great extent closed up;" and, instead of recovery, *death* followed three and a half months after. Case 12 is reported as having died *two and a half years* after the operation of exsection. The truth is, that death took place in *sixteen months.* Case 35 is presented thus: "*Rapid improvement; suppuration profuse;*" when in the authority it reads: "*On the nineteenth day gradual improvement.*" "*Suppuration small.*" We must attribute such things to carelessness or imperfect investigation, and where so many points of error are found, our faith in whatever else appears is proportionately weakened.

In the "Recapitulation" we find as follows:—

Total number of resections of head of femur for caries . .		110
Died	36	
Reported as unfavorable	2	
Recovered, with more or less useful joint . . .	72	
	110	

Our limited investigation diminishes the total by 18 cases, leaving the sum at 92. Of these 18 cases, 14 are reported as successful, and 4 as having died. Instead then of 72 successful cases, we have only 58; and instead of 36 cases of death, there were 34. Is this the sum total of the errors to be found? By no means. Does the "Recapitulation" tally well with facts in other respects? Let us see for a moment. In giving results, the reporter dates death in some of the unsuccessful cases as far even as a year and more, and very properly, too; but he puts under the head of recoveries cases under treatment at the time of reporting, some of them not more than ten days, and concerning which nothing definite was known. We would enumerate 36, 37, 45, 49, 58, 66, 68, 75, 84, 101, 104, 105, 106 as cases of this character, and therefore not with any confidence to be quoted in favor of exsection; nor to the contrary, though with much more correctness. This, then, diminishes the total of recoveries by 13, thus making the number stand only 45. But we must not stop here. By glancing over the cases and their authorities, we find 17, as before mentioned, reported as recovered. The patient died. (See *Lancet*, Aug. 14, 1852.) We find Case 59 likewise reported, but the patient died. (See *Lancet*, Oct. 17, 1857.) Case 70 stands in the same category, for the patient died in about three months. (See *Lancet*, Oct. 10, 1857, and April 28, 1860; *Med. Times and Gaz.*, Oct. 24, 1857.) The same is true of other cases, some of which are known to have died, though not reported. Taking, however, only such cases as are here authenticated, we diminish the recovery cases by three, and to the same extent add to the unsuccessful cases, together with the other errors, making quite a different summing up. As follows:—

Total cases		92
Successful	42	
Died	37	
Under treatment, and therefore doubtful	13	
	92	

To contrast the features of the reporter's "Recapitulation" with the summing up of our analysis, we find, rejecting fractions, a difference of 21 per cent. against the operation, setting aside entirely the unfavorable cases. In plain words, the reporter gives about 65 per cent. of recoveries, while we find but about 44 per cent. The reporter gives but *two* cases as unfavorable. We find *thirteen* of the same nature, and consequently, while the reporter's 65 per cent. is weakened by but *two* cases, our 44 per cent. is similarly affected by *thirteen*, really diminishing the per cent. of success.

The profession well knows the disposition of its members to make a good appearance for their operations and cases, and the failure of many to report the results, especially if not favorable; and, therefore, unless positive report as to result is recorded, we more correctly estimate the result as unfavorable in all operations of a grave character.

We thus have reached the end of the matter under consideration, and, although we have made but a limited investigation, we think sufficient has been discovered to cause us to repeat our regret that such productions should be presented under the auspices of the American Medical Association.

ART. V.—*Soyer's Culinary Campaign. Being Historical Reminiscences of the Late War, with the Plain Art of Cooking for Military and Civil Institutions, the Army, Navy, Public, etc. etc.* By ALEXIS SOYER, author of "The Modern Housewife," "Shilling Cookery for the People," etc. etc. 12mo., pp. 593. London, 1857.

IT is not often, gentle reader, that we place before you a plate of hasty soup; therefore bear with us while we mete out to you a portion of M. Alexis Soyer's palatable dishes. A "Culinary Campaign," under the surveillance of a Frenchman, and one so distinguished in all branches of aristology and the lesser gastronomical orbits, cannot fail to be sufficiently interesting to enable us to keep awake under a summary of the author's Crimean experiences. A résumé, too, is far more agreeable than a perusal of this wonderful effusion, unless one takes delight in conning over the petty sayings of each Sir J——, Lord G——, Count V——, Duke of A——, Duchess of Q——, Prince of H——, etc. etc., all of whom honored M. Soyer with their patronage, and were amply repaid by their protégé's most servile sycophancy. The work is dedicated to Lord Panmure, opens with aristocratic interviews, in all of which Soyer is "Hail-fellow well met," and ends with a familiar tête-à-tête with "my Lord Paulet." Do not fancy that there is an interregnum in which civilians play their modest part; no, even the most celebrated of these are made subservient to the titled few, and are hurried off the scene in as few words as possible. There is, however, one important exception to this last statement; full justice has certainly been rendered Miss Nightingale, a fact which may be accounted for by her ready acquiescence in, and hearty indorsement of, all of our hero's suggestions and culinary improvements. We are always glad to have our own way in this world, and are prone to think well of those who aid us in pursuing our course untrammeled through life's pilgrimage—even in such a sublunary region as the kitchen. Unthwarted regard is by no means a costly gem.

And yet that there was much true metal in M. Soyer's alloy no one can doubt after reading this philanthropic letter, which soon wrought its own fulfillment:—

"TO THE EDITOR OF THE TIMES.

"SIR:—After carefully perusing the letter of your correspondent, dated Scutari, in your impression of Wednesday last, I perceive that, although the kitchen under the superintendence of Miss Nightingale affords so much relief, the system of management at the large one in the Barrack Hospital is far from being perfect. I propose offering my services gratuitously, and proceeding direct to Scutari, at my own personal expense, to regulate that important department, if the government will honor me with their confidence, and grant me the full power of acting according to my knowledge and experience in such matters.

"I have the honor to remain, sir,
"Your obedient servant,
"*Feb.* 2, 1855. ALEXIS SOYER."

This noble offer was at once accepted by the government, and, after having engaged a secretary and two cooks, he set off for the Crimea, fortified by a small model of the field stove—which was also well adapted to hospital use. The incidents of his voyage were many and amusing. These we necessarily pass over, merely stating, for the benefit of any Benedicts who may chance to light upon this article, that especial mention is made of the colossal spout at Constantinople, from whence those Turkish ladies who prove disobedient to their lords are thrown into the Bosphorus—having been previously stitched up in a sack, containing a starving cat and a venomous serpent; rather severe discipline for so hebdomadal a fault!

Upon reaching Scutari, M. Soyer found all the kitchens badly built, and wretchedly ventilated, with the exception of two in the General Hospital. These had been constructed by the Turks, and were superbly fitted up with twenty copper boilers set in white marble, each holding about fifty gallons. But even these were not perfect, as the boilers were greatly in need of tinning. The cooking apparatus of all large establishments should be made of malleable iron, as it is much cheaper, and does not require repairing so constantly as copper. The defects in the boilers were soon remedied, and the kitchens were supplied with charcoal stoves, ovens, store-rooms, dressers, and chopping-blocks, and, under M. Soyer's superintendence, a new culinary *régime* was speedily established.

On the day of his arrival at Scutari, Soyer visited the kitchens after dinner had been served out, and was astonished to find a large copper half full of rich broth, with about three inches of fat upon it—apparently unused. He asked what was done with this, and was told that it was thrown away. We will transcribe his own sequel of this reckless waste: "I took a ladle and removed a large basinful of fat, which, when cold, was better for cooking purposes than the rank butter procured from Constantinople, of from ten to fifteen piastres per pound. The next day I showed the men how to make a most delicious soup with what they had before so foolishly thrown away. This method they were henceforward very glad to adopt. Not less than seventy pounds of beef had been daily boiled in this manner, and without salt."

After bestowing much time and attention upon the Scutari kitchen and rendering cooking a much easier art by papering the walls with culinary receipts and directions, Soyer proceeded to Kululee, where there were three distinct establishments—though under the supervision of but one doctor. The principal kitchen of the Barrack Hospital was in a most wretched condition, being smoky, ill-ventilated, and perfectly dark. The brick work was entirely destroyed, and the men were so blinded by the smoke that they greatly preferred doing dangerous work in the trenches to being subjected to this intolerable nuisance. The cooks were consequently changed every week, which, of course, led to a very bad system of cooking, and was followed by the consumption of 170 per cent. more wood than was necessary. We are told that "the men actually piled small trees, cut into lengths of five or six feet, upon the fires, and when the soup boiled too fast they threw pailfuls of water upon the burning wood, thus filling the place with dust and steam."

Soyer at once had the furnaces put in order, and the skylights repaired, and left one of his assistants in the hospital to instruct the men in the art of camp as well as hospital cooking.

Having remedied the most glaring defects in the Scutari and Kululee hospitals, and after making as many lesser improvements as the short space allotted him would allow, Soyer set sail on the 2d of May, 1855, for the Crimea, accompanied by Miss Nightingale, her friends the Bracebridges, and a number of officers. They met with a most enthusiastic reception on their arrival; throngs of persons poured in to visit Miss Nightingale, and even the common soldiers were all anxious to catch a glimpse of "the good lady of Scutari." Miss Nightingale's name has become so much of a household word that our readers will, perhaps, be glad to see the following description of her *personnel* given in M. Soyer's own language:—

> "She is rather high in stature," he writes, "fair in complexion, and slim in person; her hair is brown, and is worn quite plain; her physiognomy is most pleasing; her eyes, of a bluish tint, speak volumes, and are always sparkling with intelligence; her mouth is small and well formed, while her lips act in unison, and make known the impression of her heart—one seems the reflex of the other. Her visage, as regards expression, is very wonderful, and one can almost anticipate by her countenance what she is about to say; alternately with matters of the most grave import, a gentle smile passes radiantly over her countenance, thus proving the evenness of her temper; at other times, when wit or pleasantry prevails, the heroine is lost in the happy, good-natured smile which pervades her face, and you recognize only the charming woman. Her dress is generally of a grayish or black tint; she wears a simple white cap, and often a rough apron. In a word, her whole appearance is religiously simple and unsophisticated."

However great may have been Miss Nightingale's admiration of Soyer's good qualities and his inexhaustible *bonhommie*, we scarcely think her appreciation of the subjoined remark could have been as thorough as our culinary psycopathist could have desired. With many prefatory *ego* encomiums, he mentions, with apparent delight and gratified pride, that, during a visit of General Vivian and his *aide-de-camp* to the kitchens which had been renewed and transformed by his magical presence and advice, the former turned to him and remarked: "Monsieur Soyer, Miss Nightingale's name and your own will be forever associated in the archives of this memorable war."

Laudations of philanthropy are certainly very pleasant and gratifying, but when they come in such a shape as this, Miss Nightingale's "firm nerves" may well "tremble."

The hospital at Balaklava consisted of an immense row of huts, situated on a high mountain, and commanding a grand view of the sea; although extremely cold in winter, and correspondingly warm in summer, the site was a very healthy one, its greatest defect being its inaccessibility, which, however, could not be obviated, as Balaklava is very mountainous, and almost all the residences are built on heights.

The roofless mud kitchens of the hospital not meeting with his approbation, M. Soyer soon improvised a model which was at once accepted, and proved greatly superior to the wretched, neglected hovels which had hitherto constituted the culinary domain. Both professional and extemporaneous cooks were then taken through a course of instruction by their renowned *chef de cuisine*, and thoroughly initiated in the intricacies of camp gastronomy. The army was then suffering from the great inefficiency manifested in preserving meats and bread. When taken out of the tin cases, the meats were always found in a liquid state, unpalatable and totally unfit for use. Soyer's plan was to put up the meat well seasoned, without introducing water or any other liquid, and leave it to cook in its own gravy. When the cases were opened, the meat was perfectly solid, and surrounded by a firm jelly.

Probably the greatest service Soyer rendered during his Crimean campaign was the invention of his bread-biscuit, which was admirably adapted both for field and naval service. This biscuit was somewhat like ordinary bread, but was baked in flat cakes about twelve times the size of a common biscuit. It was made of three parts flour and one of pea meal, and after months' duration was very palatable. The medical board pronounced it highly nutritious and wholesome, and were only too glad to let it take the place of the sour and mouldy article furnished by the contractors at Constantinople.

Since the achievement of her independence, America has had so little experience in the tented field that the ignorance displayed during the present campaign, in everything involving comfort, is not so culpable as it would otherwise be. Complaints pour in from all quarters, and, if these querulous statements are to be credited, our soldiers must be suffering greatly from the absence of suitable clothing and food. Surely, when a man perils his all for the preservation of his country's honor, he is at least entitled to the bare necessaries of life. Even in its prime, the Inquisition could have boasted no more ingenious mode of torture than that which is daily practiced in our midst by giving to the tired, hungry soldier his wretched ration of uncooked, unpalatable food, of which he is compelled to partake to sustain life. A young epicurean tells us that

"We may live without poetry, music and art;
We may live without conscience and live without heart;
We may live without friends, we may live without books,
But civilized man cannot live without cooks."

Although we do not in the least indorse the statements contained in the first three lines, we are convinced that the last will meet with a universal response. From time immemorial the cook has occupied a prominent place in historic annals, and we doubt not there are still many persons who think with Voltaire that "le cuisinier est un mortel divin." We are all conversant with the cookery of Rome during the period when that proud, hill-girted city won for herself the title of "Mistress of the World," and even in childhood are taught to regard with contempt the gourmand excesses which were hourly committed by her imperial rulers. Eating, with the Romans, was comparatively a simple process before they were allowed glimpses of Asiatic magnificence and luxury. After this, they became almost as effeminate as the Sybarites, those enervated people of whom it is reported that the crumpling of a rose under the side on which they lay occasioned exquisite agony. The Roman Lucullus carried epicurism to such an extreme that he erected several dining halls in his palace, each of which was dedicated to a presiding deity, who, by a supposed simplicity or grandeur of taste, served as a guide to the steward in regulating the expenses of the banquet. For example, a supper in the hall of Apollo generally cost about fifty thousand drachmas, equal to about four thousand six hundred and eighty-seven dollars; those given in the hall of Bacchus were perhaps even more magnificent and costly; while those under the surveillance of Ceres and Pomona were characterized by a much greater simplicity and less lavish profuseness.

To the Medici princesses is accredited the honor of having transplanted Italian cookery to France, which versatile nation adapted itself with wondrous facility to the pleasures of the innovation, and soon became as effeminate as the inhabitants of Sybaris. When the cook of Louis XVIII.

was reprimanded by his majesty's physician for destroying the kingly health with too rich viands, that offended dignitary instantly replied "that it was the office of the cook to supply his majesty with pleasant dishes, and the duty of the physician to enable the king to digest them;" a hint which it would be well for all medical companions of crowned heads to hold in strict remembrance.

English cooks, it is said, can boast of an aristocratic ancestry, dating from William the Conqueror's landing in England. At a banquet given soon after the arrival of the king, in honor of his hardly-won spouse, Matilda of Flanders, he was so delighted with a soup served on that occasion, that he at once sent for his cook, Tezelin, and made him Lord of the Manor of Addington.

We have already digressed too far, as our present object has nothing to do with the luxuries or titled scions of gastronomy; we are anxious only to have culinary camp duties satisfactorily performed, and see our soldiers treated as sentient beings. As yet, our army has been too nomadic in its movements to admit of establishing a parallel between our own culinary department and that existing during the latter part of the Crimean campaign; but should our forces become concentrated, and remain stationary for any length of time, we trust some patriotic Soyer may be found who will do all in his power to obviate the hardships of camp life.

Each regimental physician should be sufficiently versed in cookery to enable him to offer suggestions and remedies in whatever culinary defects he may meet with; he should make it a sacred duty to supervise daily the sick diet, and should endeavor, by care and attention, to render hospital cookery as wholesome and palatable as possible.

We are glad to see that, through the intervention of the Sanitary Commission, the Government has determined to attempt a reformation of the culinary department of the army. This important branch will be undertaken by Mr. J. M. Sanderson, late of the New York Hotel, who will make his first reform in the Onondaga Regiment. Mr. Sanderson is to be chief of a bureau in the Commissary's Department.

The "Culinary Campaign" was not Soyer's only literary effort; he was author of "The Modern Housewife," "Shilling Cookery for the People," and a rather more elaborate production, entitled "Gastronomy of the Ancients."

It is universally accorded that Soyer was a great *artiste*—a word almost entirely monopolized by the votaries of the kitchen—a jolly companion, and a good friend to the sick soldier, inasmuch as he was thoroughly indoctrinated with the saying promulgated by the benign Hippocrates, "What pleases the palate nourishes." His loss was greatly felt and regretted in London, particularly by the *gourmets* who had instituted him as their social "Messer Gaster."

We subjoin a few of Soyer's receipts best adapted to camp cooking, trusting they may be found of use during the present campaign.

Semi stewed Mutton and Barley; Soup for 100 *Men.*—(This receipt was highly approved of by the medical authorities, and was in daily use for more than fifteen months from the date of its introduction.) Put in a convenient sized caldron 130 pints of cold water; 70 lbs. of meat, or about that quantity; 12 lbs. of plain mixed vegetables; 9 lbs. 6 oz. of barley; 1 lb. 7 oz. of salt; 1 lb. 4 oz. of flour; ditto of sugar; 1 lb. of pepper. Put all the ingredients into the pan at once except the flour; set it on the fire, and when beginning to boil, diminish the heat and simmer gently for two hours and a half; take the joints of meat out and simmer well in the orderly's pan; add to the soup flour, mixed with enough water to form a light batter; stir well together with a large spoon; boil another half hour; skim off the fat, and serve the soup and meat separately. The soup should be stirred now and then, to prevent burning or sticking to the bottom of the caldron.

Beef Tea; Receipt for Six Pints.—Cut 3 lbs. of beef into pieces the size of walnuts, and chop up the bones; put it into a kettle with ½ lb. of mixed vegetables, such as onions, leeks, celery, turnips, carrots, if they can be obtained; 1 oz. of salt; a little pepper; 1 teaspoonful of sugar, 2 oz. of butter; half a pint of water. Set it on a sharp fire for ten minutes or a quarter of an hour, stirring now and then with a spoon, till it forms a rather thick gravy; then add 7 pints of hot or cold water when boiling; let it simmer gently for an hour; skim off all the fat; strain it through a sieve, and serve.

Chicken Broth.—Put in a stew-pan a fowl; 3 pints of water; 2 teaspoonfuls of rice; 1 teaspoonful of salt; an onion, or 2 oz. of mixed vegetables. Boil the whole gently for three-quarters of an hour; if an old fowl, simmer from one hour and a half to two hours, adding 1 pint more water.

Arrow-root Milk.—Put into a pan 4 oz. of arrow-root; 3 oz. of sugar; the peel of half a lemon; ¼ teaspoonful of salt; 2½ pints of milk. Set it on the fire; stir round gently; boil for ten minutes, and serve. If no lemons are at hand, a little essence of any kind will do. When short of milk, use half water.

Soyer's Plain Lemonade.—Thinly peel the third part of a lemon, which put into a basin with 2 tablespoonfuls of sugar; roll the lemon with your hand to soften it; cut it into 2 pieces, lengthwise; squeeze the juice over the peel; stir round with a spoon for a minute, to form a syrup; pour over a pint of water; mix well, and remove the pips. It is then ready for use.

Cheap Crimean Lemonade.—Put into a basin 2 tablespoonfuls of white or brown sugar; half a tablespoonful of lime juice; mix well for 1 minute; add 1 pint of water, and the beverage is ready. A drop of rum will make a good variation.

Cheap Plain Rice Pudding, for Campaigning, (in which no eggs or milk are required.)—Put on the fire, in a moderate-sized saucepan, 12 pints of water; when boiling, add to 1 lb. of rice 4 oz. of brown sugar, 1 large teaspoonful of salt, and the rind of a lemon, thinly peeled; boil gently for half an hour, then strain all the water from the rice, keeping it as dry as possible. The rice water is then ready for drinking, either warm or cold. The juice of a lemon may be introduced, which will make it more palatable and refreshing.

Batter Pudding.—Break two fresh eggs in a basin; beat them well; add one tablespoonful and a half of flour, which beat up with the eggs with a fork until no lumps remain; add a gill of milk; a teaspoonful of salt; butter a teacup or a bowl; pour in the mixture; then put some water in a stew-pan, enough to immerge the cup or bowl half way in water. Boil twenty minutes, or until the pudding is well set; pass a knife to loosen it; turn out on a plate; pour pounded sugar and a pot of fresh butter over, and serve. A little lemon or cinnamon, or a drop of any essence may be introduced.

Tea for Eighty Men.—Put 40 quarts of water to boil; place the rations of tea in a fine net, very loose, or in a large perforated ball; give 1 minute to boil; in 10 minutes it is ready to serve.

Receipt to Cook Salt Meat for Fifty Men.—Put 50 lbs. of meat in the boiler; fill with water and let soak all night; next morning wash the meat well; fill with fresh water and boil gently 3 hours, and serve. Skim off the fat, which, when cold, is an excellent substitute for butter.

Coffee à la Zouave, for a Mess of Ten Men.—Put 9 pints of water into a canteen saucepan on the fire; when boiling, add 7½ oz. of coffee; mix them well together with a spoon or piece of wood; leave on the fire a few minutes longer, or until just beginning to boil; take it off and pour in 1 pint of cold water; let the whole remain for 10 minutes. The dregs of the coffee will fall to the bottom. Pour it from one vessel to the other, leaving the dregs at the bottom; add the ration of sugar, or two teaspoonfuls to the pint. If any milk is to be had, make two pints of coffee less; add that quantity of milk to your coffee. The former may be boiled previously.

ART. VI.—*Stricture of the Urethra; its Complication and Effects. A Practical Treatise on the Nature and Treatment of those Affections.* By ROBERT WADE, F.R.S.C., Senior Surgeon to the Westminster General Dispensary; Fellow of the Royal Medical and Chirurgical Society; and late Lecturer on Pathological Anatomy. Fourth edition, with engravings. 8vo., pp. 354. London, 1860.

A WORK which has been honored with a fourth edition, as this has been, requires no recommendation at our hands. Its character is sufficiently established. To prove this, it is only necessary to bestow upon it an attentive perusal, and to read the favorable notices which have been lavished upon it by the British press. Of the numerous treatises on stricture of the urethra that have appeared in Europe, within the last fifteen years, we know of none which, in a practical point of view, is superior to it. If it makes no pretensions to microscopical or historical details, the former of which are now so common in medical writings, it is not, in our judgment, one particle the less valuable. The aim of Mr. Wade has been to produce an eminently practical work, and we congratulate him upon having accomplished, with singular clearness and directness, his object. In his endeavors to do this, he has limited himself chiefly to the results of his own experience, extending through a period of a quarter of a century, in which he has enjoyed ample opportunities, both in public and private practice, of witnessing the effects of the various methods of treating this affection, in all its forms and complications. He has not, of course, altogether neglected the views of other writers; on the contrary, he repeatedly refers to those who have most distinguished themselves in this department of pathology and practice. Great praise is due to Mr. Wade for his laudable endeavors, throughout his treatise, to inculcate the importance of conservative surgery. The following sentence speaks for itself:—

> "In this work my great object has been to enforce the adoption of the principles and practice of 'conservative surgery' in the treatment of urethral stricture. Should the views which I have advanced induce others to hesitate before they resort to the more hazardous modes of treatment, which have lately been too prevalent, it is to be hoped that my labors in this branch of the profession may prove useful in saving many patients from the risk incurred by submitting them to operations, not unfrequently fatal, and which, I feel convinced, are seldom required."

We fully concur with the author in these remarks. It may confidently be asserted that in no department of surgery do practitioners evince so much carelessness and recklessness as in this. Experience long ago satisfied us that there are few men in the profession who are really qualified to treat stricture of the urethra upon scientific principles, and frequent observation made since has only served to confirm and strengthen the conviction.

In speaking of the *causes* of this affection, Mr. Wade expresses the belief that there is occasionally a hereditary constitutional tendency to its occurrence, and, in illustration of his opinion, he asserts that he has met with some instances of the kind in his own practice. He refers to one in particular, in which his patient was one of five brothers, who all suffered from urethral obstruction, coming on from the ninth to the fifteenth year. In each case, the disease had to be treated with the bougie. The father had also been a great sufferer from stricture.

Among the exciting causes of this kind of obstruction are, Mr. Wade says, the practice of self-abuse, and the continual discharge of unhealthy urine, containing the oxalate of lime, the lithates or phosphates in excess. In speaking of the habit of self-abuse, he remarks:—

> "I have good reason to believe that the pernicious practice of self-abuse is a

much more frequent cause of stricture than is generally supposed. In several instances of the kind, in which there had been no sexual intercourse, the strictures which were at the bulb proved more than usually refractory, from the extreme morbid sensitiveness of the entire urethral canal."

He also lays much stress upon the pernicious effects of strong injections in inducing this disease; a fact which is borne out by the experience of every surgeon. The great and pervading causes of the complaint are, of course, gonorrhœa and the remedies employed for its relief.

The author distinguishes strictures into nine varieties, contending that the classification is of great importance in a practical sense. 1. The dilatable stricture. 2. The simple chronic stricture. 3. The impermeable stricture. 4. The irritable stricture. 5. The inflammatory stricture. 6. The elastic stricture. 7. The spasmodic stricture. 8. The traumatic stricture. 9. The cicatricial stricture, from ulceration at the mouth of the urethra. Some of these varieties might possibly be dispensed with; it must certainly be frequently very difficult to distinguish them in practice. We have not time to follow Mr. Wade in his description of them. We cannot, however, forbear to append the following extract:—

> "The great majority of cases described as spasmodic stricture, there can be little doubt, result from some degree of inflammation of the mucous membrane at the posterior portion of the urethra; and that it is the irritation from the contact of the urine with the inflamed membrane which excites the surrounding muscles to action, and interferes with their necessary relaxation on the contraction of the detrusor."

Passing by the symptoms and effects of this disease, as topics too well known to require any special notice here, we come to its *treatment*, which is classed under the three heads of dilatation, cauterization, and division.

To the first of these two methods the author expresses himself as highly favorable, believing that, in a large proportion of cases, it is fully adequate to the object, provided it is conducted in a careful and gentle manner, not rudely or forcibly. His opposition to the last proceeding is very strong and decided.

> "It is almost needless to remark that the forcible, unscientific manner in which dilatation is occasionally practiced, is the abuse and not the proper use of this most admirable of all methods of treating the generality of urethral strictures. It may be taken for granted that this treatment will be most successful in the hands of those who use all possible gentleness and caution in the introduction of instruments. Let it be taken for granted, also, that it is only by the exercise of great forbearance and a firm resolution to devote the requisite time and attention to every case, which will enable the surgeon to do full justice to this simplest of all methods of procedure."

In regard to the use of instruments for the purpose of effecting dilatation, he holds the following language:—

> "If, however, I were restricted to the use of but one kind of instrument, my selection would be the simplest of all, the wax and plaster bougie, varying from a consistence soft enough to receive the impression of a stricture, to such a degree of hardness as would not readily yield to pressure. However inefficient the bougie would undoubtedly prove in some instances, I believe that it would enable me to effect more good, in a large majority of cases, than any other single dilating instrument."

In chapter eighth are discussed the aids to dilatation, and this affords Mr. Wade an opportunity of speaking of his peculiar method of cauterization with caustic potassa, or potassa fusa, a method which he has made peculiarly his own, and which he thinks has hitherto been too much neglected by the profession; an opinion in which we fully agree with him.

To those who are familiar with the literature of this subject, it is needless to say that the credit of introducing to the notice of the profession the potassa fusa, as a curative agent in this disease, is due to the late Mr. Whately, of London, who described the mode of using it, and the class of cases to which it is more particularly applicable, with great minuteness, in his work entitled "An Improved Method of Treating Strictures in the Urethra." Notwithstanding the able and forcible manner in which he spoke of the remedial powers of this article in the management of this malady, it was but little employed until attention was again called to it by Mr. Wade about thirty years ago. It acts beneficially, as he supposes, first, by relieving irritability and inflammation; secondly, by promoting absorption; thirdly, by stimulating and diminishing the congested vessels; and, lastly, by dissolving the hardened and contracted strictures. When properly applied, it produces a sensation of heat, with some degree of pain, which, however, is generally very slight and of short duration. The property which it possesses of combining with oily substances and animal mucus, forming a saponaceous compound, modifies its action, and enables it to penetrate the hardened tissues of a stricture, softening them, and thus promoting their absorption in a manner much more effectually than is done by the nitrate of silver. The following is the author's method of using the caustic:—

> "Before using the potash, a bougie should be passed down to the stricture, that its distance from the orifice of the urethra may be correctly ascertained. A small piece of the caustic, about the size of a common pin's head to commence with, should be inserted into a hole made in the point of a soft bougie. The caustic should be broken just before it is required, and the inner or dark part selected, as the outer portion is usually less efficient, as it is commonly converted into a whitish crust of carbonate of potash. Two notches should be made in the armed bougie, as directed by Mr. Whately—one marking the exact distance of the stricture; the other, an inch beyond; so that its progress, as it enters the obstruction, may be accurately observed. The bougie should be

moulded with the finger round the potassa fusa, so that it may be securely fixed; but to insure the action of the caustic, instead of being below the level of the hole of the instrument, as recommended by Mr. Whately, its points should be fairly exposed to enable it to act upon the stricture.

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"The armed bougie should, of course, be well oiled before its introduction; and if the points of the caustic are well covered with lard, there need be no fear of its acting before it reaches the stricture. The bougie should be gently pressed against the stricture for a minute or two if impermeable, and then withdrawn. When the caustic is applied to permeable obstructions, the bougie should be passed three or four times over the whole surface of the stricture. To impermeable strictures the caustic should be applied with greater caution than to such as are permeable; for should retention of urine occur, it will be more easily relieved in the latter than in the former. It usually happens that, after one or two applications of the caustic, the bougie will be found to enter the obstruction."

The best time for the application is just before going to bed; the bladder should be previously emptied, and an anodyne enema may be administered if there be danger of rigors or retention of urine. The free use of the caustic is generally followed by more or less of a slimy, mucopurulent discharge, at first usually slightly tinged with blood, but soon assuming a turbid, whitish hue. The frequency with which the application is to be repeated depends upon its effect and the nature of the case. In old chronic strictures, Mr. Wade has often used it advantageously every second or third day, and in some instances, under peculiar circumstances, even at shorter intervals.

The cases in which he has found the remedy more particularly applicable are, first, strictures of a cartilaginous hardness, impervious to instruments; secondly, strictures of long standing, which, although admitting the passage of a small bougie, bleed more or less freely on its introduction; and, lastly, irritable strictures, and such as have a marked tendency to spasm.

He positively asserts that the use of the remedy has never, in his hands, produced a stricture, or aggravated any while under treatment; and he adds that he is thoroughly convinced that it creates less tendency to recontraction in the more aggravated forms of the complaint than when it is treated simply by dilatation. In a word, his confidence in the use of the caustic is almost unbounded.

We have not space to follow the author through his remarks upon the other methods of treatment, especially external division of strictures; nor can we accompany him in what he says in regard to the complication of these affections. We have been particularly desirous of presenting to the reader a full view of his own method, and, having done this, we are reluctantly compelled to bring our notice to a close. We cannot do so, however, without tendering to Mr. Wade our cordial acknowledgments for the pleasure and instruction we have derived from the perusal of his work, and expressing the conviction that it is one of the most able, practical treatises on the subject in any language. One of the most valuable features of it is the narration of numerous cases of this disease, illustrative of its nature and symptoms, and of the author's peculiar mode of treatment. They are drawn up with great care, and bear ample testimony to the immense opportunities which he has enjoyed for studying this complaint in all its forms and complications. We trust that the work will be duly appreciated on this side of the Atlantic, and that our hospital surgeons will give a fair trial to a method of treatment of the favorable effects of which we can speak from personal observation. The mechanical execution of the book is excellent.

ART. VII.—*The Principles and Practice of Obstetrics.* By GUNNING S. BEDFORD, A.M., M.D., Professor of Obstetrics, etc. in the University of New York. Illustrated by Four Colored Lithographic Plates and Ninety-nine Wood Engravings. 8vo., pp. 731. New York: S. & W. Wood, 1861.

THE one cardina object which the author states he has had constantly before him—to be useful—has certainly been attained in the handsome volume which forms the subject of this notice. We regret that we cannot give a more extended review of its contents, but we have examined the work sufficiently to warrant us in expressing the conviction that both in its matter and arrangement it will be very acceptable to the general practitioner as well as to teachers of obstetrics. There are few points left untouched, and the skillful obstetrician wields a ready pen on every page. It is a complete treatise on the subject which it discusses, and is very full upon matters which are but lightly dwelt upon in many of the treatises on obstetrics.

We cannot, of course, in this short notice, discuss with the author theories and principles, but we can speak with commendation of the thorough and successful investigation by him of the difficult points of midwifery, for which the practitioner will feel especially grateful. The volume is issued in a superior manner, creditable alike to author and publishers; though, so far as the latter are concerned, we confess to a much higher admiration for the beautifully colored lithographic plates than for the indifferently executed wood-cuts.

ART. VIII.—*The Morbid Effects of the Retention in the Blood of the Elements of the Urinary Secretion.* By WILLIAM WALLACE MORLAND, M.D., etc. Fiske Fund Prize Essay. 8vo., pp. 83. Philadelphia: Blanchard & Lea, 1861.

THIS paper, which is a reprint from the *American Journal of the Medical Sciences* for April and July, 1861, investigates more fully than ever before, perhaps, a matter of experimental inquiry of a very important and interesting kind. The subject, as proposed by the Trustees of the Fiske Fund, necessitates, we are told—1st. The enumeration of "the elements of the urinary secretion." 2d. The recital of the effects produced by the undue "retention" of each of these in the blood. Under the latter category uræmia is considered in relation to pregnancy and parturition, gout, rheumatism, etc.; and each element in the composition of the urine is studied in its important pathological relations. The subject is ably discussed, and all that it has been possible for the writer to collect of information bearing upon the effects of such retentions, is given by him.

ART. IX.—*Chemistry in its Relations to Physiology and Medicine.* By GEO. E. DAY, M.A., M.D., etc. With five plates, containing numerous engraved illustrations. 8vo., pp. 527. London: Hippolyte Baillière, 1860.

IN the preface of the work of Prof. Day we find a candid acknowledgment of the sources from which the author has derived much of the information contained in it. The volume is a fair summary of various opinions, well put together and ably arranged, with a view to facilitate investigation into the chemical physiology of the various organs. The author divides the subject-matter of the volume into three great heads or departments:—

1. The organic substrata of the human body.
2. The chemistry of the animal juices and tissues.
3. The great zoo-chemical processes.

Most of the illustrations, which are all good, are credited to Funke's Atlas der Physiologischen Chemie. A great deal of important information is contained in the different chapters, which we regret we cannot more fully notice; but much of it must lie hidden to the casual reader, from the fact that no index points out the path to it. It is rarely now-a-days that we have to call attention to such a deficiency.

ART. X.—*Medical Jurisprudence.* By ALFRED SWAINE TAYLOR, M.D., F.R.S., etc. Fifth American from the seventh and revised London edition. Edited, with additions, by EDWARD HARTSHORNE, M.D., etc. 8vo, pp. 714. Philadelphia: Blanchard & Lea, 1861.

THE merits of this valuable work are sufficiently attested by the fact that it has passed through so many editions, both in the United States and Europe. The well-known ability and industry of Dr. Taylor are sufficient guarantee, says the preface, that he has made full use of his opportunities to introduce in the last edition the latest results of legal and scientific investigations; and we may add, also, our own testimonial of appreciation of the great service to the literature of Medical Jurisprudence conferred by the author in this comprehensive and useful work. As an authority on the subject, it is perfectly reliable; and as a guide to difficult points of forensic medicine, it has superior claims on the attention of practitioner and student.

ART. XI.—*Transactions of the Obstetrical Society of London,* vol. ii. for the year 1860. 8vo., pp. 368. London, 1861.

THE volume before us contains many interesting papers upon facts and theories of obstetrical science and art. We have here recorded cases of labor impeded by unnatural growths, ovarian tumors, lacerations of the cervix uteri, monstrosities, ruptured perinæums, and many of the accidents and annoyances which give pain to the sufferer, and anxiety to the practitioner of midwifery. Several of these are especially interesting, but we have space for mere allusion to them, and cannot indulge in a notice, which we should otherwise have given, of a paper in these Transactions, by Dr. A. B. Granville, on "certain phenomena, facts, and calculations incidental to or connected with the power and act of propagation in females of the industrial classes in the metropolis." The other papers seem well chosen, and the whole collection forms a very readable and instructive book, in which those interested in obstetrics may peruse much that is novel and curious.

Original Communications.

ART. I.—*Conservative Medicine.* By AUSTIN FLINT, M.D., Prof. of the Principles and Practice of Medicine in the Bellevue Hospital Medical College, N. Y., and in the Long Island College Hospital.

"WHAT does the writer mean by *Conservative Medicine?*" This will be the mental inquiry of the reader when the caption of this article meets his eye. It is desirable, first of all, for the writer to explain the subject which he ventures to hope will appear to possess interest enough to lead to a perusal of the pages which are to follow.

The meaning of *Conservative Surgery* is well understood. This phrase has been sufficiently common of late years. The conservative surgeon aims to preserve the integrity of the body. He spares diseased or wounded members whenever there are good grounds for believing that by skillful management they may be saved. He resorts to mutilations only when they are clearly necessary. He weighs carefully the dangers of operations, so as not to incur too much risk of shortening life by resorting to the scalpel. By conservative medicine, I mean an analogous line of conduct in the management of maladies which are not surgical. The conservative physician shrinks from employing potential remedies whenever there are good grounds for believing that diseases will pursue a favorable course without active interference. He resorts to therapeutical measures which must be hurtful if not useful, only when they are clearly indicated. He appreciates injurious medication, and hence does not run a risk of shortening life by adding dangers of treatment to those of disease. Such, in brief, is an explanation of the subject of this article; to give a fuller exposition of the subject is, in part, the purpose of the article. For the phrase *conservative medicine* I am indebted to a distinguished friend and colleague, well known as eminently a conservative surgeon.*

During the last quarter of a century a change has taken place in medical sentiment as regards surgical operations. New and grand achievements in surgery seemed formerly to be the leading objects of personal ambition. To borrow a fashionable expression, they were decidedly the rage. Boldness in the use of the knife was the trait in the character of the surgeon which was most highly admired. The history of surgery during the first third of the present century is characterized by the introduction and frequent performance of numerous formidable operations. It was customary to speak of them as brilliant, and the daring surgeon enjoyed somewhat of the *éclat* which belongs to the hero of the battle-field. This analogy was implied when one of the greatest of our American surgeons, wishing to distinguish his most brilliant exploit, styled it his Waterloo operation. The change that has taken place is marked. We hear now comparatively little of terrible operations, and of that sort of heroism which is associated with bloody deeds. What would once have been considered as a degree of courage to be admired, is now stigmatized as rashness. It is an equivocal compliment to say of a practitioner that he is a bold surgeon. The change, it may be said, is in a measure due to the fact that the great number of new operations which have been introduced since the beginning of the present century leaves but a limited range for further explorations in that direction; but this explanation will go only a little way. The change is one of sentiment. The desire is to preserve the integrity of the body, to avoid mutilations, to incur the dangers of capital operations only when they are imperatively called for—in a word, conservatism has become the ruling principle in surgery. The most important of the more recent improvements in surgery exemplify the influence of this principle on the medical mind.

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* Prof. Hamilton.

An analogous change, within the same period, has taken place in medical practice. Formerly, boldness was a distinction coveted by the medical, as well as by the surgical practitioner. "Heroic practice" was a favorite expression, consisting in the employment of powerful remedies, or in pushing them to an enormous extent. The physician emulated the surgeon in daring. The change is not less marked in medicine than in surgery. We hear now oftener of diseases managed with little or no medication, than of cases illustrating the abuse of remedies. In the treatment of many affections it is not considered necessary to employ measures which, but a few years ago, it would have been considered culpable to withhold. The change, too, is here one of sentiment. We desire to preserve the vital forces, to avoid the perturbations and damaging effects of potential therapeutic agencies—in short, conservatism has become a leading principle in medicine as well as in surgery. The improved method of managing a host of affections will be found to illustrate this fact.

Before proceeding further, let us inquire how the contrast between medical practice at the present moment and a quarter of a century ago, should affect our estimation of medicine Is medicine disparaged by the changes which have actually taken place? It is not enough to answer this question in the negative. Mutations, when they denote progress, are, of course, desirable. In so far as the contrast shows improvement, medicine at the present moment is deserving of esteem, the more, as the changes are great. It redounds to the glory of medicine that it admits of illimitable progressive changes. In this fact lies the distinctive feature of legitimate medicine as contrasted with illegitimate systems of practice. But, some one may say, is there to be no stability in medicine, no traditional authority, and is reverence for the past to have no influence? If not, where is our ground of confidence in the practice of the present day? And is it not probable that at the end of another quarter of a century mutations will have occurred quite as great as those which have taken place during the last twenty-five years? These questions are to be met fairly and squarely; let us endeavor so to meet them.

Waiving the consideration of what constitutes perfectibility in the *ars medendi*, and whether it be obtainable or not, no one will assert that medicine is now, or ever has been, in a condition not to admit of indefinite improvement. Improvement in its practical applications and results is the great end of the labors devoted, now and hitherto, to the different departments of medical knowledge, viz., anatomy, physiology, animal chemistry, materia medica, pathology, and clinical medicine. We may assume that these labors, thus far, have not been profitless, and, accordingly, that practical medicine has improved. We may assume, also, that there is abundant encouragement to continue these labors, and, hence, that further improvement is to be expected—to what extent it is vain to speculate. It necessarily follows that stability in medicine is not to be counted upon; that the doctrines of to-day have no intrinsic claim to perpetuity; that because they are now in vogue is not a sufficient reason why they should not hereafter be modified or rejected, and that there is, to say the least, no ground to deny the possibility of the changes which are to take place hereafter being a whit less than those which have already taken place. What then? There are skeptics and scoffers with regard to medicine, and there are many persons who live and thrive by promoting popular distrust of it. It may seem to be giving aid and comfort to the enemies of medicine to concede that its past history abounds in errors, that present errors doubtless abound, leaving ample scope for future improvement. Be it so. We have nothing to do with skeptics, scoffers, and charlatans. We are not called upon to repel attacks prompted by ignorance, selfishness, and deceit. Yet it is desirable, with regard not only to the interests of the medical profession, but to the welfare of humanity, that medicine should hold its proper place in popular estimation. What, then, is the attitude to be taken as regards the just claims of medicine to public consideration and confidence? A body of men in every generation, from the time of Hippocrates to the present day, in all civilized countries, have conscientiously and industriously labored to acquire knowledge of diseases with reference to the relief of suffering and the prolongation of life.

Under a host of difficulties and obstructions, many inherent in the pursuits themselves, and others proceeding from various extrinsic sources, the labors of physicians and their collaborators have continued and still continue. Now, granting that they have advanced slowly and often been led astray, where else can society ever seek for aid in the necessities of illness with a better prospect of success? Granting that they have failed, and still fail, in conferring all the benefit that is to be desired, and that, with the purest intentions, their efforts have been sometimes not only without avail, but hurtful, should the preponderating good be therefore overlooked, and is there any rational alternative but to accept good and submit to the limitations and errors incident to existing knowledge? All that society can claim of medicine in any generation is, the capabilities of the medical science in that generation. All that society can claim of physicians is, that these capabilities shall be understood and judiciously applied. But we are opening up trains of thought which will lead us a long way from our subject, and we must abruptly return to the consideration of conservative medicine.

It is an interesting point of inquiry, whence came the influences leading to conservatism as a principle of medical practice? The answer to this inquiry would not be the same in all countries and sections. It must be admitted that in our country the earliest and fullest development of the principle was in New England. Our New England brethren are fond of dating a new order of medical ideas from the publication of an address, more than twenty years ago, by Jacob Bigelow, on the self-limited character of certain diseases. Not underrating the importance of that publication, the spirit of the oral teachings of James Jackson and John Ware has exerted on the medical mind of New England an influence which can only be appreciated by those who have experienced it. To those who have known experimentally the value of their teachings, it is a source of deep regret that the influence of these admirable professors has not been more widely diffused by means of larger contributions to medical literature. British conservatists attribute much to the writings of Dr. Forbes. Among the non-medical observers of the change in practice which has taken place, some have been persuaded that it is due to the disciples of Hahnemann, an idea too preposterous to need refutation. The truth is, we are not to look for the causes of the change exclusively in the views emanating from particular persons. It is rather a legitimate result of scientific researches in different directions. If we were to specify circumstances which have more especially been instrumental in leading to the principle of conservatism, we would mention, *first*, the abandonment of the attempt to found a system or theory of medicine after the decline and fall of Brunonianism and Broussaisism; and *second*, the study of diseases after the numerical method with reference to their natural history and laws.

Strange as it appears, the importance of determining by clinical observation the intrinsic tendencies of different diseases as the basis of therapeutics, seems to have been heretofore overlooked. Physicians have acted on the presumption that most diseases do not pursue a favorable course without treatment more or less efficient. This has been, to a still greater extent, the popular belief. The apparent proof of the success of the Hahnemannic treatment rests on this belief. What are the facts already ascertained with respect to the intrinsic tendencies of different diseases? We know that diseases in the management of which, but a few years ago, the physician would not dare to omit potent therapeutical measures, almost invariably end in recovery without any active treatment. Take, as examples, pneumonia limited to a single lobe, and acute pleurisy. It is sufficiently settled that these diseases involve very little danger in themselves, proving fatal only in consequence of complications. The practitioner, therefore, no longer feels obliged to employ blood-letting, mercurialization, cathartics, blisters, etc., in these diseases, with reference to the saving of life. The only question is, do patients pass through these diseases as well without as with such measures of treatment? Clinical observation, following up this inquiry, arrives at results which exemplify conservative medicine.

Our acquaintance with the natural history of the great majority of diseases is, as yet, very incomplete. Knowledge of the tendencies of diseases allowed to pursue their course without active treatment, is not readily acquired. We cannot conscientiously withhold remedies which we have reason to believe may prove useful. Cases are therefore to be slowly accumulated in which, from circumstances not under our control, diseases have been uninfluenced by therapeutic interference. This knowledge, it is evident, is the true point of departure for the study of the effects of remedies as regards the termination and duration of diseases. The information already obtained has rendered the use of powerful therapeutic agencies far less common than they were but a few years since. It remains to be seen hereafter what will be the further effect on medical practice of continued researches in this direction.

Conservative medicine assumes that remedial measures, according to their potency, must either do harm or good; that they can never be neither hurtful nor useful. Prior to the advent of conservatism, this important fact was not duly appreciated. Blows were leveled at diseases, but the patient was not enough considered. It did not enter sufficiently into the calculations of practitioners that if successive blows dealt at a disease were misdirected, the effect was not lost, but injury was inflicted in proportion to their force. Hence, it must needs follow that the sick man sometimes encountered, in addition to his malady, assaults not less real because well meant. In this respect, certainly, we have evidence of progress. We are satisfied that we do not err in saying that the most judicious practitioners of the present day accept the following maxims of that eminently conservative physician, Chomel: *first*, that we are not so much to treat diseases, as patients affected with disease; and *second*, that not to do harm, is no less an object of treatment than to do good.

In defining conservative medicine, we have seen that it expresses a characteristic of the improvements in medical practice during the last twenty-five years. Let us now direct our attention to illustrations afforded by some of the different classes of remedial measures. And, first of all, blood-letting suggests itself. How great the change as regards this remedy! Twenty-five years ago it was employed as if it were an innocuous remedy. Practitioners thought much more of the risk of not resorting to it when it was needed, than of the evils of its being needlessly resorted to. Hence, they often acted on the rule inculcated by a medical writer, viz., when in doubt use the lancet. How different the rule of treatment now! Few practitioners of the present day would resort to this remedy in any case in which its appropriateness seemed to them questionable. Why not? Because it has been ascertained to be a spoliative remedy. It causes a disproportionate loss of the corpuscular elements of the blood, which are slowly regenerated. These corpuscular elements are already deficient in many diseases. In short, anæmia and its pathological relations were very imperfectly understood a quarter of a century ago. It is clear now to every one that, if not indicated, blood-letting should never be employed. This simple statement explains, in a great measure, the comparative disuse of blood-letting. The great question now is, whether it is a remedy called for more or less frequently in the management of certain diseases, chiefly the acute inflammations. I do not propose to enter here into a discussion of this question. This much may be said: clinical observation, which is alone competent to settle the question, has shown that it is a remedy not called for so often or to so great an extent in acute inflammations as was supposed but a few years ago. A single incidental remark with respect to blood-letting, and it is one which will apply to other remedies: In determining its influence for good or evil by means of clinical observation, it is not enough to take into account the ratio of recoveries, and the duration of cases of disease. Blood-letting may not increase the mortality from a disease, nor protract its continuance, and, yet, prove injurious. The injury may be manifest only in the slowness of convalescence and the impaired condition of the system after recovery.

Cathartics were prescribed a quarter of a century ago much more generally and to a much greater extent than at the present time. In fact, purgation was considered as rarely out of place, whatever might be the nature or seat of the disease. This harmonized with the notion that very many diseases originated in, and nearly all were liable to be perpetuated by, causes acting within the alimentary canal. Abernethy's views of the constitutional origin of local diseases were generally received and acted upon, and with him the constitution and the bowels were almost convertible terms, constitutional treatment consisting in the nightly blue pill and the morning black draught. The great Sir Astley Cooper quoted with approbation the quaint saying of an old Scotch doctor, who declared that fear of God and keeping the bowels open were the chief requisites of duty for safety in this world and the world to come! The importance of purgation became deeply rooted in popular sentiment. Cathartic pills or potions were considered indispensable in every household, and it would hardly express the frequency with which they were used, to say that family devotions were far less common. These were the days when, as Stokes remarks, more truly than chastely, doctors seemed to have always in their minds "a cathartic and a potfull of fæces." In this day, when a change has taken place as respects the employment of purgatives, physicians suffer from the fact that it takes a long time to eradicate a firmly fixed popular notion. Not only do we find it often embarrassing to reconcile patients to a different practice, but we are expected to inquire into, and carefully examine daily, by sight and smell, the excretions of patients, when we might otherwise consult our comfort (to say nothing of dignity) by dispensing with this exercise of the senses. The objects for cathartics, as now considered, are comparatively few, consisting chiefly in the removal of constipation, and their hydragogue operation in dropsy. They are no longer given as a matter of course, without definite indications. As perturbatory and debilitating agents, they cannot but do harm if not required, and their frequent repetition conflicts with nutrition, and thereby with sustaining measures of treatment. The change, as respects this class of remedies, thus illustrates the principle of conservatism.

It is needless to remind the reader familiar with the practice current twenty-five years ago, of the frequency with which emetics were employed. Of morbid causes referred to the alimentary canal, a large share were supposed to exist in the *primæ viæ*—an expression then often used by writers and in common parlance. The same notion taken up by the public was conveyed by the homely expression "foulness of the stomach." Emetics were prescribed by physicians to remove saburral matters, and vomiting desired by patients as a cleansing operation. Severe and prolonged vomiting by lobelia, in conjunction with the vapor bath, constituted the Thompsonian practice.

which, in certain parts of our country, for several years, was considerably patronized. At the present time, emesis, irrespective of cases of poisoning and over-repletion, is rarely produced, excepting as incidental to the use of remedies not prescribed for that purpose, such as the nauseant sedatives, colchicum, veratrum viride, etc. What would be thought of a practitioner now who treated cases of phthisis with emetics repeated almost daily! Yet, within the memories of physicians of twenty-five years standing, this practice has been advocated, and, to some extent, adopted. The progress of medical conservatism has led to the abandonment of emetics, as perturbatory and debilitating agents, excepting in the rare instances in which they subserve an explicit purpose.

The practice of the present time presents a striking contrast with that twenty-five years ago, as regards the use of counter-irritant applications. The physician whose professional career has already extended over that period, is sometimes reminded of the severe measures then in vogue, by the exhibition of indelible scars on the bodies of his old patients. He is not likely now to contemplate these traces of his former vigorous practice with lively gratification. Blisters, sometimes applied successively over the same space, and not diminutive in size, tartar emetic ointment and plasters, issues, the moxa, etc., were considered as among the most efficient of the means of influencing the cure of a host of local affections. How much less frequently are they now used, and, when counter-irritation is deemed advisable, how much milder are the applications chosen! Physicians were strongly impressed with the belief that local affections were often removed by revulsion. They accepted the doctrine of Hunter, that two diseases rarely concur, and hence, that an artificial disease is likely to effect a cure by a process of displacement. Not only has this doctrine been disproved by pathological researches, but these have shown a large number of the local diseases formerly regarded as primary, to be the secondary or tertiary effects of morbid conditions then unknown. Bright's disease had not been discovered, and its multitudinous pathological conquences were, of course, unintelligible. In those days solidism prevailed, and hæmatology has been since created. Physicians made no account of blood poisons, and the old humoral notions of coction and fermentation had not been revived under the modern but equally indefinite garb of catalysis. Mr. Farr had not invented the name Zymosis, a name expressive of our ignorance rather than conveying any precise knowledge, but, nevertheless, significant of a wide and most important leap from the doctrine of solidism; or, in other words, of a passage backward, guided by the light of modern science, to humoralism, which, as Rokitansky remarks, is simply a requisition of common sense. This change in pathological views, in conjunction with clinical observation, has led physicians to distrust, more and more, the value of counter-irritant applications, and, at all events, to conclude that severe revulsive measures are rarely called for; hence, the change in practice is in comformity to the principle of conservatism.

The contrast as regards the use of mercury affords a signal instance of progressive change. The remarkable efficacy of this remedy in certain affections naturally led to the expectation of its utility in many diseases. Mercurialization being a disease, it accorded with the current belief of the incompatibility of different affections, to suppose that it displaced other diseases. It was considered as *par excellence* an *alterative* remedy; and what a latitude for imagined results was afforded by that title! Moreover, its supposed special action on the liver accorded with the notion that the secretion of bile had much to do with morbid phenomena. The relief or prevention of portal congestion was incidental to its hepatic effects. It lessened exudations; it promoted the absorption of morbid products; it altered the secretions; it dispelled local engorgements, and, by exciting stomatitis, it acted by way of revulsion. Waiving here, as in the other instances, discussion of the actual value of this remedy, the extravagance of the views formerly entertained is now sufficiently evident. The statements of those who have made war upon this article of the materia medica, and the popular prejudices thereby produced, are equally, or still more, extravagant; but it is a remedy potent for harm when inappropriate, as it is powerful for good when indicated; and, therefore, the great change that has taken place as regards its use exemplifies conservatism.

These examples are sufficient to show how conservative medicine is illustrated by recent improvements as regards the employment of particular therapeutic measures. They furnish evidence of immense progress in practical medicine. Let not this statement be misunderstood. The improvements which have been noticed consist in the restricted use of blood-letting, cathartics, emetics, counter-irritants, and mercurials. Does the restricted use of these measures detract from their real therapeutic value? Not at all. Medicine has, by no means, repudiated them. She employs them with better judgment and discrimination; thus availing herself of the good they can accomplish, she escapes the evils arising from their injudicious and indiscriminate use.

If we look at the progress of medicine during the last quarter of a century, from another point of view, we find additional examples of conservatism. Regarding it exclusively from the point of view already taken, it appears that, in proportion as the practice of medicine has improved, reliance on certain active or heroic measures of treatment has diminished. This is true, but it is not the whole truth. Some measures are employed with much more freedom now than a few years ago. The use of opium and alcoholic stimulants, in certain diseases, affords the most striking illustrations of this truth. These instances also exemplify the principle of conservatism. Opium and alcohol, in excessive doses, occasion immediate disorder, of more or less gravity, and may destroy life. But given so as not to incur any risk of these effects, they do not conflict with conservatism, because their operation is transient, and, unless their use be continued, they do not leave behind them damaging effects. Given in quantities which are comfortably borne, they certainly do not impair the vital forces by perturbation, by loss of fluids, by affecting the constitution of the blood, or by inducing local changes, as do the measures previously noticed. This statement, of course, has nothing to do with the ulterior consequences, moral and physical, of intemperance or opium eating. Here, too, as in other instances, discussion of the *modus operandi* of remedies is waived. Most physicians will agree in the statement that, when indicated as remedies, opium and alcohol sustain the vital forces. In this respect they are positively conservative. But a point of distinction is, when not indicated, if given within certain limits, and not continued, they are neither spoliative, exhausting, disturbing, nor disorganizing, as are various other measures, and, therefore, not, like the latter, even then, antagonistical to conservative medicine.

The contrast between the practice of medicine now and twenty-five years ago is not less marked, as regards the use of opium and alcohol, than as regards the restricted employment of other measures. Let the practitioner, who has seen service for a quarter of a century, consider what a responsibility he would once have taken in treating cases of pneumonia with brandy and opium, to say nothing of the continued fevers. The wonderful tolerance of these remedies in certain cases of disease is a recent discovery. Let the same practitioner consider whether he would once have ventured on a hundred grains or more of opium *per diem* in a case of peritonitis, or grain doses of the sulphate of morphia hourly, continued for several days, in a case of dysentery. Let him consider whether, at the commencement of his career, with the fulminations of Broussais on incendiary practice resounding in his ears, he ever dreamed of the propriety of giving quarts of spirit daily to fever patients, and of finding the frequency of the pulse diminished, and the mind become more clear under this heavy stimulation !

If we turn from remedial measures to dietetics, we find that the improvement which has taken place in practice contributes to the illustration of conservative medicine. In fact, conservatism is, perhaps, not less conspicuous in the contrast as respects the diet of the sick than in any other point of view. In cases of fever, and all acute diseases, twenty-five years ago, it was generally deemed an essential part of the treatment to withhold alimentary supplies. It was a frequent saying to patients who craved food, that to allow it would be to nourish the disease. In chronic affections, too, the diet was usually much restricted. It was believed that a large majority of diseases were attributable, directly, to dietetic imprudences, and that the over-ingestion of food, during the progress of diseases, was, of all indiscretions, the most prolific of evil. Physicians seemed to lose sight of the plain fact that the vital powers must languish in proportion as the alimentary supplies fall below the wants of the system, and that death may be produced by starvation in disease as well as in health. At the present time, a nutritious diet is considered as highly important in the management of fevers, as well as in diseases which tend to destroy life by exhaustion, and most physicians appreciate the importance of keeping the body well nourished in chronic affections.

Incidentally a point for remark is here suggested. Twenty-five years ago disorders of digestion, grouped under the name dyspepsia, were extremely frequent. Dyspepsia was the popular malady of the day. The number of dyspeptics, of late years, has greatly diminished. The malady is comparatively infrequent. Why is this? I believe it to be explained, in a great measure, by the fact that in the matter of eating, instinct has regained its rightful supremacy. We do not hear so much now, as then, of the liabilities to dietetic errors. Physicians are not so ready to attribute diseases to some imprudence at the table. The subject is not brought to the minds of the people by means of conversation, popular books on diet, public lectures and sermons. The healthy man no longer sits down to dinner with fear and trembling, lest he should eat too much, or indulge in improper articles of food. There are fewer patients who hold to the fanatical notion, that moral and physical health requires the demand of the system for food in sufficient quantity and variety, as expressed by hunger and appetite, to be resisted; and that the welfare of body and mind is promoted by living on a poor and insufficient diet. We rarely, now-a-days, hear the injunction, which was once impressed upon all who would preserve health, to adopt the habit of always rising from the table hungry. Nature and common sense have triumphed over these absurd ideas, and, among other advantages, dyspeptic ailments, which formerly tormented so many persons, have wonderfully diminished.

Recurring to the definition of conservatism in medicine, it suffices to say that it means the preservation of the vital forces. It is a principle in medical practice, covering everything which prevents impairment of, or tends to develop and sustain, the powers of life. The terms "vital forces" and "powers of life," although they are not readily explained, have a practical meaning, which is well enough understood, and it is unnecessary to enter into an explanation of them. It has been the object, in the foregoing pages, to give an exposition of conservative medicine, and to show that conservatism, in the sense in which the term is now used, is a distinguishing feature of medical practice at the present time, as contrasted with the practice which prevailed twenty-five years ago. The development and adoption of this principle have been seen to be results of the progress of medical knowledge, and the circumstances which seem especially to mark the beginning of the changes illustrating the principle are, abandonment of attempts to reduce the practice of medicine to a system, after the failure of the latest, viz., Broussaisism, and the study of the natural history of diseases, as inaugurated by Louis. It is by no means, however, intended to ignore the fact that the cultivation of all the branches of medical knowledge has powerfully co-operated to the same end. The changes which have taken place during the last quarter of a century have not been due to a prior recognition of the principle of conservatism, but now that the changes have occurred, we find conservatism to be common alike to all, binding them together, and constituting their most striking characteristic. Having reached the principle thus analytically, are we not bound to recognize it as a fixed principle of medical practice, and one possessing great practical importance? Assuming it to be such, the remainder of this article will be devoted to its applications in the management of different forms of disease. And, first, let us consider the application of conservatism to the treatment of patients with inflammatory affections.

Theoretical views led to the measures called *antiphlogistic* in cases of inflammation. These measures, consisting of general and local blood-lettings, cathartics, and rigid or restricted diet, were considered as antagonizing the state of inflammation; not unfrequently arresting its progress, and, when not successful in this end, diminishing its severity, limiting its morbid effects, and abridging its duration. As already remarked, the injury which these measures are capable of doing was overlooked, and, on the other hand, all will admit that their efficacy, in effecting the objects just stated, was greatly over-estimated. Clinical experience has shown that we cannot rely upon these measures to arrest the progress of inflammation. Admitting the possibility or probability of success in a small proportion of cases, we are not justified in exposing patients to the injury produced if these measures do not succeed, when the chances are few that they will prove successful. This statement expresses a rule of conservatism applicable to all potent measures employed in any disease as abortive measures of treatment. Measures not impairing the vital forces are allowable, even when the probability of success is small. Opium, for example, is admissible as an abortive remedy when blood-letting is clearly inadmissible. But measures which, if not successful, will do harm, are only to be resorted to when the chances of success preponderate over those of failure. Conservatism, therefore, does not justify the employment of the antiphlogistic treatment with a view to the arrest of inflammation, without taking the ground that they invariably fail.

Clinical experience has rendered it doubtful whether the antiphlogistic treatment exerts much effect on the intensity of inflammation, its results, or its duration. Conservatism, therefore, dictates a careful weighing of the evils of the treatment against the chances of its usefulness as regards these objects.

It is not settled by experience that this treatment, carried to a greater or less extent, is always in no measure efficacious. Hence, there is room for difference of opinion, and the practice of different physicians will differ. The discriminating practitioner, who, although satisfied of the evils of the indiscriminate employment of antiphlogistic measures, believes in their ability, if judiciously employed, will be guided in withholding or resorting to them, by the circumstances belonging to individual cases. And here it is that his practical knowledge, judgment, and tact are brought to bear on the management of inflammatory affections. Conservatism will dictate to such a practitioner not to employ blood-letting, etc., when the inflammatory affection, from its seat and degree of intensity, involves no danger, and when there is reason to suppose that it may pass through its course favorably, without active interference. Conservatism will dictate the same policy when all the local results to be expected from the progress of inflammation have already taken place, and the restorative processes only remain—a condition illustrated by the second stage of pneumonia, when all the exudation that is to occur has occurred, and the recovery involves only the absorption of the morbid deposit. Conservatism will dictate the same line of conduct in all cases of disease in which more danger is to be expected from failure of the powers of life, than from lesions incident to the local affection.

The value of therapeutic agencies is, of course, to be determined by experience. Developments in the progress of pathology, however, contribute to our knowledge of therapeutics, not only by giving direction to clinical observation, but by harmonizing with the conclusions drawn from the latter. It is interesting to note the consistency of the practical views now generally held as regards antiphlogistic measures, with late developments respecting the origin of certain inflammations. Inflammations not traumatic were formerly considered, and are now often called spontaneous. We may use this term conventionally as distinguishing a local disease not referable to any obvious local cause, but, strictly, it is an absurdity to say that any disease is spontaneous. Every local affection must involve an adequate morbific agency acting on the part affected. It is true that our present knowledge does not enable us generally to appreciate the nature, sources, and the *modus agendi* of the proximate causes of inflammatory affections, but we have acquired, of late years, some information important in itself as a basis for analogical reasoning. Clinical observation has shown that the accumulation of urea in the blood is apt to lead to inflammation of serous structures. This we know, and it is a rational supposition that urea (or the products of its decomposition) induces inflammation, by acting directly on these structures. There are sufficient grounds for believing that the local inflammations occurring in gout and rheumatism are due to the local action of a *materies morbi* in the blood, perhaps the uric acid in the former, and the lactic acid in the latter of these diseases. Reasoning by analogy we may expect with considerable confidence that future researches will show the so-called spontaneous inflammations generally to be produced in a similar manner. And with this view of their production, we should rationally expect great results, not so much from the antiphlogistic treatment as from measures addressed to the morbid conditions of the blood which underlie the local manifestations of disease. To ascertain these morbid conditions in different diseases, to prevent the introduction or accumulation of morbific material in the blood, to neutralize the poisonous properties of this material, by causing the promotion of innocuous combinations, prevent the organico-chemical changes which its presence induces, (catalysis,) or to eliminate it through the emanations of the body,—these are the great objects of therapeutics at the present day, which harmonize with the late revelations of pathology. Without stopping to inquire how far these objects have been obtained, it is to be remarked that they are obviously conservative, involving, as they do, protection against internal agencies inimical to life and health.

Conservative medicine thus dictates, in inflammatory affections, proper discrimination in the employment of the so-called antiphlogistic measures, which, if failing to exert a controlling influence, are necessarily hurtful, and, it may be, destructive, by impairing the vital forces. It also dictates the judicious use of remedies addressed to the internal causative conditions pertaining to the blood, so far as our present knowledge extends into these most important provinces of pathology and therapeutics. But this is not all. Conservatism often demands that the vital powers shall be sustained. Sustaining measures of treatment, practically considered, consist of tonics, alcoholic stimulants, and nutritious diet. We will not inquire as to the rationale of the operation of these measures. Suffice it to say, clinical experience shows abundantly that they lessen the degree to which the vital forces would otherwise be impaired by disease, and may prevent a fatal termination of disease by exhaustion. I have already admitted that the phrase "powers" or "forces of life" is metaphorical. Life is not an entity. But with a fair understanding that this personification of a combination of conditions, as yet but imperfectly understood, is merely for convenience, it is unobjectionable. The powers or forces of life enable the system to bear up under disease, to resist it successfully, and recover from it. On the other hand, we may say that disease destroys by overcoming the powers of life, whenever death takes place by asthenia or exhaustion. Every sagacious practitioner knows that certain symptoms, no matter with what disease they are associated, denote failure of the vital powers, or inability to resist disease. He estimates the amount of danger by these symptoms, among which those referable to the circulation are especially important. He often bases his prognosis far more on these symptoms than on the nature and extent of the local affection. Every practitioner knows that an inflammation, the same in all respects, so far as the local affection is concerned, in different persons, affects the vital forces differently. Take, for example, pneumonia, extending over the same space, and inducing an equal amount of changes, which physical exploration enables us to determine with accuracy: one patient manifests little disturbance of the system, and no symptoms denoting danger, while another patient will succumb to the disease. Every practitioner knows that some persons, who, in health, present no evidence of a lack of vigor, have very little ability to resist severe disease. They are quickly destroyed by affections which other persons readily endure, and endure perhaps without much inconvenience. Of course, these facts are explicable, but not with our present knowledge, and, until explained, it answers to refer them to differences as regards the vital powers or forces. They are facts of not a little practical importance.

Conservatism dictates sustaining treatment in any inflammatory affection whenever the symptoms denote failure of the vital powers, whether the period be early or late in the course of the affection. This treatment is to be pursued vigorously in proportion to the rapidity of the failure and the amount already taken place. It is important in all dangerous affections to watch for the first evidence of failure, and to lose no time in resorting to supporting measures. Such is the influence of traditional ideas, that these measures are frequently delayed from a timidity which experience is sure to remove. It is far wiser to enter on the use of tonics, stimulants, and a nutritious diet too early, or when not required, than to incur risk of delay, or their omission when required. In the one case, the liability of harm is small, but in the latter, lost time, which cannot be regained, may have been of immense importance to the patient. So far from incurring risk of damage from delay, the wise practitioner will anticipate the indications for support, and forestall the failure which he knows would otherwise occur. Physicians, however devoted to the antiphlogistic treatment of inflammations, have generally recognized the importance of supporting measures to "obviate tendency to death." When the flame of life is reduced to a glimmer, they would prevent it, if possible, from going out. Does not common sense teach that measures which may prove serviceable under these circumstances, would have proved much more so when the danger was less imminent? Is it not better policy to endeavor to keep the lamp of life burning brightly, than to depend on efforts to restore the flame when nearly extinguished? In cases involving danger to life, the importance of sustaining treatment is to be measured by these questions: Is the chief danger due to failure of the vital powers, and how great is the danger from this source? In cases not involving danger to life, the importance of support has reference to the duration of the disease, the rapidity of convalescence, and the condition of the recovery. The advantages derived from the proper application of conservatism, as regards sustaining treatment, in all operations, by no means consist exclusively in a reduced rate of mortality, but also in a speedy and rapid convalescence, and in the completeness of the restoration to health.

These remarks have had reference more especially to acute inflammations. Chronic inflammation affecting an important part may continue for a greater or less period, and recovery finally be complete; but during its continuance the powers of life are more or less impaired. It may destroy life by leading to incurable lesions, or by its protracted duration; in either case death usually taking place by slow asthenia. Under all circumstances, the affection is less likely to be prolonged, serious changes of structure are less likely to take place, and a fatal termination is postponed in proportion as the vital powers are preserved. Conservatism, therefore, dictates not measures to reduce, but those which sustain the powers of life in chronic inflammations. It dictates measures to develop appetite, and improve the digestive processes, abundant nutritive supplies, and, in short, the remedies and hygienic means which invigorate and strengthen the body. The "building up" treatment, as it is significantly called, has contributed largely to the more successful management of chronic affections since the days of Broussaisism. Some of the most striking examples of the efficacy of this treatment which I have seen have been cases of chronic pleurisy, in which speedy and progressive improvement followed directly the substitution of this treatment for measures opposed to the principle of conservatism. These examples are the more satisfactory because, by means of physical signs, the improvement within the chest was accurately determined at the same time that the local and general symptoms denoted a favorable charge. Certain cutaneous inflammations, and cases of ophthalmia, the parts in these affections being open to inspection, also afford examples not less striking.

Conservatism has been practically more fully applied to the management of essential fevers than of inflammatory affections. Since nearly all pathologists have admitted the essentiality of fever, and since physicians have ceased to agree with Southwood Smith in regarding inflammation as an almost constant concomitant and the chief source of danger in fever, the importance of preserving and sustaining the powers of life has been more and more appreciated, and, at the present moment, with the most intelligent practitioners, these are the leading objects in the treatment. In this remark I refer especially to fevers having a self-limited career, and not arrested by abortive measures. The periodical fevers are controllable by remedies having a special efficacy. These remedies are conservative, acting in an imperceptible manner, and, given within proper limits, producing no destructive or injurious effects even if not indicated. It is a curious fact that the fevers which we are able to arrest with great certainty, *i.e.* the periodical fevers, continue indefinitely if not arrested, and return, sooner or later, and more or less frequently, in the majority of cases, whereas the fevers which we cannot arrest with any certainty, if at all, *i.e.* the continued fevers, the eruptive, and yellow fever, have a fixed duration, and, as a rule, are experienced only once. It is not without the bounds of a reasonable expectation that the means of arresting the last-named fevers will hereafter be discovered. Reasoning by analogy, and from the pathological views now generally entertained, the means for this end must act by neutralizing a morbid material in the blood, or effecting its elimination, acting, therefore, in accordance with the principle of conservatism.

Tonic remedies, alcoholic stimulants, and nutritious diet are the measures for maintaining the vital forces during the course of the essential fevers. The importance of these measures is now so generally admitted as hardly to require argument or advocacy. The only questions for discussion relate to circumstances indicating their employment, the extent to which they are to be carried, and various details connected with their use. The discussion of these questions does not fall within the scope of this article. I may be indulged, however, in a few remarks on some interesting points connected with the subject.

One of these is the wonderful tolerance of alcoholic stimulants in certain cases of fever. Examples have been of late so often repeated, and are so generally familiar, that they need not be cited. How much at variance are the effects of pints or even quarts of spirit, given daily, with those produced in health! And how fully does this fact, as well as analogous facts relating to the action of opium and other remedies, illustrate the liability to error in judging of the operation of therapeutic measures in disease from experimental observations in healthy persons! How surprised, but a few years ago, would have been the therapeutist if told that the action of alcohol, under certain morbid conditions, is in fact sedative;

in other words, that, in certain cases of typhus and typhoid fever, two or three ounces of spirit given hourly lessen the frequency of the pulse, diminish the heat of skin, and render the mind more clear! But the past history of medicine shows a tendency to push prevailing ideas to an extreme, against which the prudent physician should endeavor to guard himself. There is danger now of carrying the use of alcohol to an injudicious and dangerous extent. The principle of conservatism should be the guide. The object is to sustain the vital forces. The tolerance is in proportion to the need of this sustaining agent. If it be used excessively in all cases, without discrimination, it will sometimes do harm, and life may be destroyed by alcoholic poisoning. We have already seen that, within certain limits, alcohol is eminently a conservative remedy, because even when not indicated, it is not destructive, and its operation is transient, but beyond certain limits its effects may be poisonous, provided it does not fulfill indications showing that the system is tolerant of quantities which would be dangerous in health. Let the indications, then, in individual cases, be carefully observed, and let the effects be carefully noticed, so as not to violate, but conform to the rule of conservatism.

Some interesting points are connected with the dietetic management in cases of fever. In perfect health the wants of the system for alimentary supplies are expressed by hunger and appetite. Common observation, however, teaches us that these sensations are not essential as prerequisites to digestion and nutrition. Almost every one has experienced a state, certainly abnormal but not dependent on any well-defined disease, and not interfering with the usual habits of mental and physical activity, in which food is taken habitually for a greater or less period without hunger or appetite, and nevertheless properly assimilated. Intense mental preoccupation and persisting depressing emotions may involve such a state. During the career of fevers, usually, hunger and appetite are wanting, but it is not to be inferred therefrom that the ability to appropriate nutriment is lost. Some have reasoned that the absence of the desire for food is always evidence of its not being needed, and a comparison has been made between the morbid condition, in this regard, in the essential fevers, and the natural state of hybernation. But the analogy holds good only as respects the disinclination for food. In hybernation, the respirations, the heart's action, muscular movements, and the functional exercise of all the organs, are reduced to the lowest point compatible with the preservation of life. In fever, the respirations are far oftener increased than diminished in frequency, and more oxygen enters the system than in health; the heart beats with unwonted frequency, muscular action is not wanting, and in the more frequent respiratory movements it is above the healthy standard; the mental faculties are sometimes morbidly active, and, from the absence of sleep, often more continuously so than in health; calorification is increased, and various functions of the body manifest disordered activity. It seems sufficiently clear that no practical inferences are to be drawn from a comparison between the arrest of hunger and appetite in fever, and the suspension of these sensations in hybernation. In hybernation the system has no need for alimentary supplies, and, hence, there is no physiological expression of the want of them. In fever the morbid conditions prevent the feeling of this want, although the need of alimentary supplies continues.

The correctness of the statement just made rests on clinical observation. Patients with fever, taking food without inclination and even with repugnance, retain it, and no disturbance is produced by its ingestion; the fecal evacuations may present a normal appearance, and, in some cases in which a nutritious diet has been entered upon after the disease has existed for some time, there is an evident increase of muscular strength, although the career of the fever continues. These are clinical facts. And the conclusion is, digestion and nutrition are not incompatible with the state of fever, although hunger and appetite may be wanting. The faculty of perceiving these sensations is impaired or lost in consequence of the morbid condition of the nervous system, and, hence, they cease for the time to express the demands of the system. The perceptions are often so blunted that the mind takes no cognizance of other wants of the system. The urine is allowed to accumulate in the bladder, and, with the tongue desiccated, the patient manifests no desire for drink. Fatigue from lying continuously in the same position is not complained of. Local complications of the disease are not accompanied by pain. Under these circumstances, it is consistent that the sensations of hunger and appetite should not be experienced. The perceptive faculties, however, sometimes are not so much impaired as they appear to be. Desires and feelings may not be manifested from an extreme reluctance to make any exertion. Thus, patients not unfrequently drink with avidity when the cup is brought to their lips, who make no complaint of thirst; and in some cases, food, when presented, is also taken with relish.

In sustaining the powers of life in fevers, then, (and also in certain other diseases,) the physician is not to be restrained by the absence of hunger and appetite. He is to act with reference to the wants of the system by endeavoring to secure the ingestion of food, concentrated, containing the necessary variety of alimentary principles, and ample in quantity. Here, too, as with regard to alcoholic stimulants, it is far better to begin earlier than is needed, than run any risk of delay, and to give more aliment than is required than not enough. An appreciation of the importance of alimentation in fevers is among the most important of the recent improvements in practice which exemplify the spirit of conservatism. But in all acute diseases, whenever the chief end of treatment is to support the powers of life, a nutritious diet is essentially important, and the same rules with regard to dietetic management are alike applicable.

It will suffice to notice the application of conservatism to those chronic affections collectively which destroy by gradual inroads upon the powers of life. In this class are grouped such affections as carcinoma, tuberculosis, chronic dysentery, cirrhosis, and Bright's disease. It is sufficiently clear that, with a view to the prolongation of life, when recovery is not expected, the great object is to retard, as much as possible, the failure of the vital forces. If we cannot "build up," we may do much to delay the progress of destruction. Evident as this is, it is not sufficiently appreciated by all practitioners.

Patients affected with incurable diseases are too often abandoned to merely palliative remedies, the fatal issue being considered as merely a question of time, and, therefore, not of much importance. This question of time, however, may be highly important to patients and their friends. To aid in the cure of diseases is, undoubtedly, the first aim of the physician; and next to this, when a cure is not to be effected, comes the prolongation of life, with health more or less impaired. The last of the grand objects of practice are palliation and euthanasia.

In the management of any incurable affection, conservatism dictates the measures which, in general terms, contribute to keep the body in the best possible condition compatible with the continuance or progress of the disease. In this way not only the inroads of the disease on the powers of life, but the destructive lesions in the parts affected, are often stayed. It may be assumed to be a rule in pathology that a local affection involving structural changes is less likely to progress with rapidity, the closer the approximation to health in all other respects. The practice which conservatism dictates in such cases is in accordance with this rule. An incurable lesion is sometimes so completely held in abeyance, and the system is rendered so tolerant of its continuance, that life may be preserved indefinitely, although a vital organ be affected. We meet with cases in which depositions of tubercle and carcinoma remain for a long period non-progressive and nearly innocuous. The conservative practice, moreover, favors those retrogressive changes by which even the diseases just named may eventuate in cure.

To consider the measures for keeping the body in the best possible condition, would be to enter on a large but immensely important domain of practical medicine. I must content myself with saying that they consist, first, of a nutritious diet; next, of remedies to strengthen and invigorate; and last, of hygienic influences directed to the same end. The hygienic influences comprise exercise and everything relating to regimen, change of climate, mental diversion and encouragement—in short, whatever can be brought to bear favorably upon the welfare and vigor of the system. The hygienic is certainly not inferior in importance to the medical treatment, and here it is that the judgment and tact of the successful practitioner are especially brought into requisition.

A comparison of cases of pulmonary tuberculosis now and twenty-five years ago, illustrates the importance of the practical views just presented. The management of this disease twenty-five years ago was certainly not in accordance with the principle of conservatism. The measures employed, medicinal and hygienic, were, indeed, directly opposed to this principle. The antiphlogistic system of treatment was often adopted, under the belief that inflammation was the most important element of the local affection. Blood-letting, cathartics, mercurialization, severe counter-irritation, were considered as remedial, and to these were conjoined low diet and confinement within doors. Now, pulmonary tuberculosis is not cured in the majority of cases, although it is not incurable, and there is reason to believe that the proportion of cures is considerably larger than under the treatment just referred to. But, directing attention to the incurable cases, under the plan of treatment generally pursued at the present time, which is eminently conservative, how striking the contrast! Formerly, the instances of rapid progress of the disease were more numerous, and it almost invariably advanced with a steady march, rarely occupying many months in completing its fatal career. Patients were usually confined to the bed for weeks before death, lingering on the borders of the grave, suffering from extreme debility, bed-sores, aphthæ, and colliquative diarrhœa. It was difficult to conceive of a picture more distressing and repulsive than that of an unfortunate being in the last stage of consumption. Conservatism has done much toward ameliorating the condition of consumptives, even when it is hopeless as regards recovery. Cases of so-called galloping consumption are less frequent. Life is not unfrequently prolonged and made comparatively comfortable for years. It is not uncommon to meet with instances of a considerable deposit of tubercle remaining quiescent or progressing very slowly, and the patient able to engage in the active occupations and enjoyments of life. Even when the disease is progressing to a fatal termination, the strength is usually so far preserved that a bed-ridden consumptive is now rarely seen, and it is not uncommon for patients to be out of doors almost up to the hour of their death. I appeal to those whose medical experience has extended over a quarter of a century for the truthfulness of this comparison.

In concluding these fragmentary remarks, let it be borne in mind that, important as is conservatism in medical practice, it is by no means inconsistent with the employment of efficient therapeutic agencies in the management of diseases. The conservative surgeon does not hesitate to use the knife and dismember the body, when convinced that thereby he may save life. So the conservative physician resorts without hesitation to his potential remedies—not less potent for good or evil than the scalpel—whenever he sees clearly that they will contribute to the safety and welfare of the patient.

ART. II.—*A Sketch of the Life, Character, and Services of Ambrose Paré.* By S. D. GROSS, M.D.

To form a just estimate of the services of the man whose character it is my design here briefly to delineate, it is necessary to remember that he entered upon his career at a time when the arts and sciences were nearly extinct, when the intelligence of the world was shut up in the cloister, when philosophy was afraid to speak, and when the people were devoted more to the pursuits of war than to the cultivation of letters and the advancement of civilization. Unable altogether to free himself from the failings and prejudices of his age, he, nevertheless, stands forth as a bright example of true greatness and Christian virtue; performing extraordinary labors as a civil and military surgeon, composing voluminous and useful treatises, occupying the highest social position, and winning for himself, by the force of his intellect, his unwearied industry, and the remarkable purity of his life, an imperishable name. The period in which he lived was one of the most remarkable in history. It was characterized by great and stirring events. At the time of his birth, hardly half a century had elapsed since the invention of the art of printing, and not more than seventeen years since Columbus had announced to Europe the discovery of a new hemisphere, now teeming with thirty millions of people. Ere yet he had fairly entered upon the study of the profession which he afterward so much adorned and illustrated, Luther was sowing the seeds of the Reformation, and shaking the foundation of the religious faith of Europe; Ariosto was maddening his countrymen with the beauty and pathos of his poetry; Erasmus was delighting the world with his matchless scholarship; Copernicus was studying the revolutions of the heavenly bodies; and practical learning and genuine science were beginning, though only beginning, to assert their rights before men.

Ambrose Paré was born at Laval, a little town in the Province of Mayenne, in 1509; consequently a little more than three centuries and a half ago. Of the character and occupation of his parents we are entirely ignorant; all that is satisfactorily known of them is, that they were poor, and that, after having given their son such an education as the opportunities of their residence afforded, they placed him with a priest, who was to instruct him in the Latin language. In consequence, however, of the very small price of tuition, he compelled his pupil to work in his garden, to take care of his mule, and to perform other menial services. It is not improbable that the father of Ambrose originally intended him for some mechanical pursuit, or, it may be, for the ministry, for which his clerical preceptor was perhaps secretly preparing him. After he quitted his service, however, he was placed under the care of a barber-surgeon of Laval, named Vialot, who instructed him in the art of bleeding, and probably also in that of bandaging and of dressing fractures. While thus occupied, accident seems to have determined his future life. Colot, afterward so celebrated as a lithotomist, although then quite young, chancing to have a case of stone in the neighborhood, requested Ambrose to assist in holding the patient, an offer which he eagerly embraced. Struck with admiration at the result of the operation, he resolved to go to Paris to study the higher branches of surgery, an art which was then almost exclusively in the hands of the barbers. Here, availing himself of the services of masters who explained to him the works of Lanfranc, Guido de Cauliac, and John de Vigo, the only surgical text-books of the times, he soon acquired a passion for his profession, and made the most brilliant progress. In a short time after he went to Paris, he was employed by Goupil, a professor in the College of France, to assist him in his practice, attending to such cases as required the minor operations of surgery, as bleeding, bandaging, and the dressing of wounds and ulcers. He also took lessons in the art of elocution, in which, it is said, he made great proficiency, having possessed a natural talent for speaking. It was not long before he obtained a situation in the Hôtel-Dieu, as a resident pupil; and it may well be imagined with what delight and eagerness he availed himself of the opportunities of a hospital which was then, as it has ever since been, one of the largest establishments of the kind in the world. So great was his progress that, after a sojourn here of three years, he was appointed, in 1536, when only twenty-seven years old, to accompany the Colonel-general of artillery, René de Mont-jean, in the capacity of surgeon, to Italy. On his return to Paris, which took place after the surrender of Turin, and the death of his military friend, he entered upon the practice of surgery in that city, and by his skill and good conduct soon attracted the attention of the public.

The opportunities for studying medicine and surgery in the time of Paré can be properly appreciated only by a survey of the state of the profession in the fourteenth and fifteenth centuries. These periods belonged emphatically to the dark ages. The art of printing, invented in 1452, had as yet done little to enlighten the general mind or to advance the interests of our profession. The sun of medicine had long ago sunk behind the horizon; Europe had no medical philosophers; and even the feeble light shed abroad by the school of Salerno, established in the eleventh century, was flickering in its socket and almost extinct. Chemistry, properly so called, had no existence; the only text-book of anatomy was that of Mondino, a medley of inaccuracy and superstition; the practice of medicine was overloaded with polypharmacy; midwifery was exclusively in the hands of females; and in surgery the only works in any favor were those of Lanfranc, Guido de Cauliac, and John de Vigo, all destitute of vigor and originality. The system of instruction by lecturing, as followed at the present day, was entirely unknown. Public teaching was limited to an exposition of the writings of some of the older masters; dissections could be carried on only by stealth; and a student must, indeed, have been exceedingly fortunate if he could occasionally witness an operation upon the living or dead subject.

In the infancy of society medicine and surgery were practiced indiscriminately by the same persons. The human body was considered as a unit, and no distinction was made between internal and external diseases. The separation of medicine and surgery did not occur until a comparatively recent period. Surgery, as such, was originally practiced exclusively by the priesthood, who were thus enabled to exercise a much greater influence upon the public, besides making it a source of profit for the aggrandizement of the church. This state of things continued until 1163, when the Council of Tours, held by Pope Alexander III., resolved to recall the clergy to their legitimate duties, from which they had been partially alienated by their secular occupations, and accordingly decreed that no one who had taken a religious vow should thenceforth engage in the study of medicine under fear of excommunication. Notwithstanding the severity of this penalty, the edict was soon infringed, and it therefore became necessary to fulminate a fresh anathema against transgressors, with the additional proviso that, "as the church abhorred all cruel and sanguinary operations, the priests should not only abstain from the practice of surgery, but also withhold their bendiction from all who professed it in any manner whatever."*

The effect of this new enactment, which took place in the reign of Pope Honorius III., in 1215, was to throw the practice of medicine into the hands of laymen, and to compel the sick to visit the priests at their cloisters. Such of them as were unable to do this contented themselves with sending their dejections, the inspection of which, it was asserted, was quite sufficient for these men to form a correct diagnosis of the disease.

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* Millingen's Curiosities of Medical Experience, p. 286. London, 1839.

As to the surgical cases, the priests had them attended by the barbers of the neighborhood, whose chief business it was to bleed, draw teeth, and dress wounds and sores, besides shaving, and tonsurating the heads of their clerical masters. Thus arose the distinction of *barber-surgeon*, a name which they retained until the middle of the seventeenth century.

In 1268, St. Louis, desirous of exhibiting his gratitude to the surgeons for the important services which they had rendered to his soldiers during the Crusades, established at Paris a College of Surgeons, in honor of St. Cosme. To be eligible for membership in this institution, the first of the kind ever founded, it was necessary for the candidate to possess a good academical education, to go through a regular course of studies, and to pass a creditable examination. From the privileges of this college the clerical barbers, or servants of the priests, were, of course, excluded; a circumstance which gave rise to the distinction of the surgeons into two orders, the licentiates of the College of St. Cosme, or the master-chirurgeons, and the shavers, or barber-surgeons, properly so termed. Paré, early in life, became a member of the fraternity of master-surgeons, for in his treatise on wounds, published in 1545, he assumes the title of master-barber-surgeon at Paris, and this title he retained until 1552, when he became surgeon-in-ordinary to King Henry II.

The distinction of master-surgeons and barber-surgeons continued until 1655, when they were incorporated in one college; "a union which was further confirmed, in 1660, by royal ordinance, under some limitations, whereby the barbers should not assume the title of licentiates, bachelors, or professors, nor be allowed to wear the honorable gown and cap that distinguished the higher grades of learning. Red caps were in former times given by each barber to his teacher on his being qualified, and gloves to his fellow-students."

There was another distinction between these two classes of surgeons, and one, indeed, which was common to them and the physicians, namely, the surgeons of the long robe and the surgeons of the short robe, the former constituting, as it were, the dignitaries of the profession. The practitioners of those days were in the habit, in all parts of continental Europe, but more particularly in Paris, of visiting their patients on mules, attired in this peculiar garb, and of concealing their ignorance by holding their conversation in bad Latin; "or, if they condescended to employ the vernacular, mixing it up with such a jargon of scholastic phrase and scientific *technics* as to render it perfectly unintelligible to vulgar ears." This practice continued until after the middle of the seventeenth century, when, chiefly through the influence of Molière, who leveled at it the shafts of his raillery and his sarcasm, it was gradually abandoned for the dress of men of the world. In Great Britain the wig and gold-headed cane, relics of the same pompous custom, were in vogue until a much later period; the latter, indeed, until the death of Dr. Baillie, in 1823, after it had been in use among some of the most illustrious members of the profession in England for a century and a half.

In this country, as well as in certain portions of the continent of Europe, the race of barber-surgeons is not yet wholly extinct. In not a few of the smaller villages and towns of this State some of the barbers, in addition to their distinctive occupation, add that of bleeding, cupping, and extracting teeth, the usual charge for the first and last of these operations being twelve and a half cents; a circumstance which, alone, insures them business.

The pole used by the barbers both in this and other countries was formerly employed by the barber-surgeons as a sign of their particular profession. In blood-letting it was customary, as, in fact, it still is, for the patient to grasp a stick, while the arm was tied up with a red fillet, or a piece of red flannel. When the operation was over, the fillet was twisted round the stick or pole, which was then hung up as a sign, to attract customers, venesection being a very common operation, especially among country people, in the spring and autumn. In time, instead of hanging out the actual pole, a pole painted with red stripes was permanently placed at the door of the barber-surgeon, just as it now is at the shop of the barber.

Thus it will be perceived that the descent of the surgeon was anything but aristocratic, or flattering to his vanity. Like many other pursuits it had its origin in obscurity and humility. Ambrose Paré was its great head, the point of departure of the many illustrious names that have since adorned this branch of the healing art, and conferred so many blessings upon the human race. He was the prototype of a Desault, a Dupuytren, a Hunter, a Richter, a Physick, and a host of other worthies whose fame is as imperishable as the science which they so successfully cultivated.

Paré, as has already been stated, was appointed surgeon-in-ordinary to King Henry II. in 1552, and he served in the same capacity Francis II., Charles IX., and Henry III. These monarchs were all warmly attached to him; he was at once their privy-counselor and their professional adviser; he followed them in their campaigns, and he attended them in their retirement. Their confidence in his skill was boundless. When Charles IX. was thought to be hopelessly ill from the effects of a wound in the arm, consequent upon venesection, Paré soon succeeded in relieving his suffering, and finally in restoring him to health, thus securing his everlasting esteem and gratitude.

The confidence of the public at large in the knowledge and skill of this remarkable man was not less extraordinary. The power of this confidence was strikingly illustrated by a circumstance which happened at the siege of Metz, soon after he was appointed court surgeon. This town, which was invested by Charles V., at the head of a hundred thousand men, contained the flower of the French nobility, and many of the finest soldiers of the day, all reduced to the utmost extremity by hunger and fatigue, hardly any of the wounded escaping death, such was the miserable professional skill of the place. It was at this juncture that the beleaguered army bethought themselves of Paré. They accordingly dispatched a messenger to the French king, entreating him to send Paré to them. He arrived late at night, and being introduced into the city through the treachery of an Italian captain, who received a large reward for his services, both officers and soldiers immediately crowded around him, and, exhibiting the most profound delight at his presence, exclaimed, "we have no longer any fear of dying even if we should be wounded; Paré, our friend, is among us." Every one was inspired with new courage, and the result was that Metz, which, but a moment before, was almost at the point of surrendering, held out until the gallant army, which lay beneath its walls, perished from disease and famine.

His influence over Charles IX. was so great that it enabled him to put a stop to the progress of the massacre of St. Bartholomew, on the 24th of August, 1572, when 70,000 Protestants, better known by the name of Huguenots, were butchered in Paris, and in various parts of France, by the order of that weak and youthful prince. Private animosities, often terminating in bloodshed, had long existed between the Huguenots and Catholics; and affairs had, at length, reached such a crisis that it was determined to exterminate, if possible, the former by a single blow. For this purpose, the court issued orders, on the night above mentioned, to the Provost of Paris, to provide 2000 armed men, each supplied with a particular badge, and to be ready for the work on the ringing of the bell of the palace clock. It is related that, as the awful moment approached, Charles, who was then hardly twenty-three years of age, was seized with horror at the contemplation of the impending scene, and that he would willingly have retracted his orders if he could have withstood the pernicious councils of his mother. His countenance was blanched and ghastly, his forehead was bedewed with cold perspiration, and his whole frame shook like that of a man laboring under an attack of ague. That night the house of every Huguenot in Paris was broken open, and the inhabitants murdered without distinction of age, sex, or rank. The streets were strewed with the bodies of the slain, and the blood-thirsty monarch himself is said to have fired upon his subjects, in their attempt to escape from the Faubourg St. Germain.

For three days and nights this inhuman butchery prevailed in the streets of the French capital; and had it not been for the influence of one man, although that man was a Huguenot, the destruction would probably have been continued until not one Protestant would have been left to tell the sad story of an event which must forever disgrace the name of France. That man was Ambrose Paré. "It was not long," says the Duke of Sully, who has so graphically described this scene of carnage and of cruelty, "before Charles felt the most violent remorse for the barbarous action to which they had forced him to give the sanction of his name and authority. From the evening of the 24th of August he was observed to groan involuntarily at the recitation of a thousand acts of cruelty, which every one boasted of in his presence. Of all those who were about the person of this prince, none possessed so great a share of his confidence as Ambrose Paré, his surgeon. This man, though a Huguenot, lived with him in so great a degree of familiarity that, on the day of the massacre, Charles telling him the time was now come when he must turn a Catholic, he replied, without being alarmed, 'By the light of God, sire, you cannot have forgot your promise, never to command me to do four things, namely, to enter into my mother's womb, to be present in the day of battle, to quit your service, or to go to mass.' The king soon after took him aside, and disclosed to him freely the trouble of his soul: 'Ambrose,' said he, 'I know not what has happened these two or three days past, but I feel my mind and body as much at enmity with each other as if I were seized with a fever; sleeping or waking, the murdered Huguenots seem ever present to my eyes, with ghastly faces, and weltering in blood. I wish the innocent and helpless at least had been spared.' The order which was published the following day, forbidding the continuance of the massacre, was the consequence of this conversation." Paré, at the time of this massacre, was sixty-two years of age, and of all the good deeds which he ever performed there was not one, it may be supposed, that afforded him so much heartfelt satisfaction. Charles did not long survive this horrible war upon his own subjects. His conscience was filled with remorse, and he fell a prey to his infirmities when only twenty-five years of age, being succeeded by Henry III., who had the good sense to retain Paré in his service.

Paré was a copious author. His first publication was given to the world soon after his return from the wars in Italy, under the title of "A Method of Treating Gunshot and other Wounds," the fruits of his observations in the army. It appeared in 1545, when he was not more than thirty-five years of age. This was soon followed by other treatises, both anatomical and surgical, which attracted much attention at home and abroad, and thus served to enlarge a reputation that was already exciting the envy and opposition of his contemporaries, especially the physicians. It was not until 1575 that a complete edition of his works appeared.

The book was printed in folio, and was accompanied by numerous woodcuts illustrative of the anatomy of the human body, of surgical instruments, and of different kinds of monsters, upon the latter of which there is an elaborate and entertaining chapter. The figures, amounting to 300, were prepared at Paré's own expense, at a cost of 3000 livres, a large sum when we consider the character of the professional charges of the times; and they afford an excellent idea of the state of the art of engraving soon after the middle of the sixteenth century.

The edition was very appropriately dedicated to Henry III., "the most Christian king of France and Poland," "a pattern and treasury of my labors." From an epistle accompanying the inscription I make the following extract, as it serves to show how long the author had served his profession and the estimate he placed upon his literary and scientific labors:—

"For God is my witness, and all good men know that I have now labored fifty years with all care and pains in the illustration and amplification of chirurgery, and that I have so certainly touched the mark whereat I aimed, that antiquity may seem to have nothing wherein it may exceed us, besides the glory of invention; nor posterity anything left but a certain small hope to add some things, as it is easy to add to former inventions. In performance whereof I have been so prodigal of myself, my watchings, faculties, and means that I spared neither time, labor, nor cost, whereby I might satisfy and accomplish my own desires, this my great work."

His object evidently was to produce a great and comprehensive treatise, combining both the theory and practice of surgery. In his attempt to carry out this noble design he sought not his own glory alone, but also, as he distinctly avows in the dedication above referred to, the "praise and profit" of the French nation.

In 1582 an edition of his works appeared in Latin, at Paris, beautifully illustrated, and printed in superior style. The name of the translator was not given, but it is generally supposed to have been Hautin, a learned physician, and a personal friend of the author. Not less than six editions of this translation were successively issued at Frankfort, the last in 1652, nearly three quarters of a century after the death of Paré.

From the great celebrity which the works of Paré had attained at home, it is not surprising that they should have been translated into the principal learned languages of Europe. Among the nations which thus appropriated the labors of the illustrious Frenchman, the Dutch deserve the praise of having led the way, a translation having appeared at Leyden as early as 1604. Subsequently four editions were published in Holland, one at Harlem and three at Amsterdam, the last in 1649. Five editions appeared in Germany, and also several in England, the most complete of which is that of Thomas Johnson, at London, in 1634, under the title of "The Works of that famous Chirurgion, Ambrose Paré, translated out of the Latin and compared with the French." The title-page, according to the fashion of that day, is illuminated with a portrait of Paré at the centre of the top, a picture of a man undergoing the operation of trephining being on the left, and an apothecary with his jars and bottles on the right; further down are suspended a skeleton and a subject exhibiting the muscles; while at the bottom of the page are retorts and alembics, surgical instruments, and different animals, the whole forming a very grotesque but interesting feature of the art of engraving in the early part of the seventeenth century. The work passed altogether through three editions, the last bearing the imprint of 1678.

Johnson seems to have executed his translation with great care and fidelity, or, to use his own language, "plainly and honestly, laboring to fit it to the capacity of the meanest artist." The Apology, and Voyages forming the concluding portions of the work, were "Englished" by George Baker, a surgeon, of London, "since that time, as I hear," says Johnson, "dead beyond the seas." The translator has generally confined himself rigidly to his text, but in a few places he has added various explanatory notes.

All these different translations, as well as the original French works of Paré, are now extremely scarce. Occasionally a stray copy, the value of which was not appreciated, or which belonged to some deceased medical man, is found in an auction room, or upon the shelves of some collector of old and rare books; but there are few surgeons of the present day whose libraries are graced by such a treasure.

In 1840, a new edition of his collected works was published at Paris, in three beautiful royal octavo volumes, by Mons. Malgaigne, one of the great admirers of the father of French surgery, and himself a man of great learning and celebrity in his profession. It is illustrated by a full-length portrait of Paré, from a painting by David, and is accompanied by numerous historical and critical notes, preceded by a sketch of the history of surgery in the sixteenth and seventeenth centuries, and a memoir of the life and writings of the author. For this edition, by which I have materially profited in the preparation of this sketch, the profession owes Malgaigne a debt of gratitude, as it places the works of Paré, in a greatly improved form, within the reach of every modern medical scholar.

It was long a question with medical historians, whether Ambrose Paré was really the author of the works which bear his name, or whether he merely superintended their composition. Quite a number of persons have been invested with this honor, as though they had been mere hirelings, selling their labors and their birth-right for a mess of pottage. Malgaigne, who has investigated this subject with his accustomed patience and learning, positively avers that there is no reason whatever to believe that Paré derived any aid of this kind from any one. This indeed appears sufficiently evident from what Paré himself says in the preface to his works; for, after alluding to the fact that he had submitted his writings to the inspection of some of his professional friends, medical as well as surgical, he avows that they are all his own, the materials and the whole fabric being based upon his personal observation and reading.

Much of this dispute respecting the authenticity of Paré's writings doubtless had its origin in the fact that the College of Paris, composed exclusively of physicians, claimed the privilege of licensing books, a privilege which Paré spurned, inasmuch as he had obtained a direct order for issuing his works from the king. The College had evidently not supposed that a surgeon could write so great a treatise upon anatomy, surgery, pharmacy, campaigns, and natural history; its range was far beyond their comprehension, and it was therefore perhaps natural for them, especially as they were extremely jealous of their imagined rights, to accuse Paré of having furnished merely a compilation, the labor chiefly of young physicians, as if young medical men were more competent to compose a treatise on surgery than one who had devoted a whole lifetime to its practice and contemplation.

The greatest service rendered by Paré to his profession and to the world, was his application of the ligature to divided arteries, for the purpose of arresting hemorrhage. The value of this treatment can be duly estimated, at the present day, only by an acquaintance with the practice of the older surgeons in cases of injuries and operations involving any considerable loss of blood. For ages the only remedy for arresting hemorrhage was the actual cautery, or a piece of heated iron applied directly to the orifice of the bleeding vessel. It was particularly popular among the Arabian surgeons, from whom it was borrowed by the practitioners of France, and it was in high repute when Paré entered upon his professional career. Albucasis, who flourished in the latter half of the eleventh century and the beginning of the twelfth, and whose surgical treatises were republished at Oxford, England, as late as 1778, wrote fifty-eight chapters on the actual cautery, in which, among other things, he took special pains to point out its advantages as a hemostatic agent. The result of this practice was that the great majority of those who were subjected to it perished from secondary hemorrhage, coming on at a variable period after the detachment of the sloughs, which almost necessarily followed the searing of the divided vessels. If the artery was large, the unfortunate patient generally died soon after the accident, from the inability of the blood to form a sufficiently strong and opposing clot. In many cases the bleeding recurred from time to time until the system was completely drained of blood. The operation was not only painful, but excessively alarming, so that many persons would almost prefer death to submitting to its cruel requirements. When a limb was amputated, the custom for a long time was to plunge the stump in boiling oil or pitch; and, during naval engagements, it was customary to keep these fluids on hand in the cockpit of vessels, ready for use in case of need. Paré for awhile followed a practice which had been sanctioned by long usage, though he did not fail, from the very first, to perceive its cruelty and utter inadequacy. He was swept along by the general current. His mind, however, was silently engaged in devising a more efficient and scientific treatment; and, after numerous trials, he at length announced to his professional brethren the use of the ligature as a remedy at once safe and of universal applicability. It is possible that he found the traces of his invention in the writings of Celsus and Albucasis, for it is certain that both of these authors refer to the subject, although it does not appear that they ever employed the treatment at the bedside. Indeed, the Roman physician probably never practiced at all, while it is certain that the Arabian continued until the close of his life to confine himself to the hot iron. If this assumption be correct, it follows that the credit of first applying the ligature for the arrest of hemorrhage strictly belongs to Paré, and such, I am satisfied, is the fact. He certainly did not derive the idea from any of his contemporaries; if he had, their clamors would soon have furnished the proof.

It might have been supposed that the truth with which he was to enrich his age would have been first received and fostered in the heart of his professional brethren at Paris. But it was otherwise. Opposition met him in every quarter. Many of his most influential contemporaries became turbulent and furious in their denunciations, and Paré, like Harvey at a later period, for a discovery also pregnant with important blessings, suffered for awhile in his practice. Of his different enemies, none were so loud and vindictive as Gourmelen, President of the College of France, a coxcomb of little brains but great pretension, whom they appointed at a later period to prosecute Paré in the courts of justice, because he dared to publish his work on surgery. "It was then," says this conceited personage, who is now remembered only for his persecutions of his illustrious contemporary, "it was then very forward, rash and presumptuous in a certain individual, to venture upon condemning the cauterization of bleeding vessels after cutting off a mortified limb, a method so highly and continually commended and approved by all the ancients, teaching in opposition to that, without any authority, without knowledge, without experience, without good sense, some new method of his own, of tying arteries and veins."

In the controversies which were thus engendered, coarse and vulgar expressions were often interchanged, imparting a fierceness and a want of dignity not altogether obsolete among certain medical men at the present day. Thus Gourmelen calls Paré a blood-thirsty, cruel rascal, while Paré retorts in language no less vulgar and inelegant. But the illustrious surgeon could not be supposed to be able to submit to every abuse that was heaped upon him by a set of men who, prompted by envy and jealousy, spared no pains to crush him and to destroy his influence.

"You boast, Mons. Gourmelen, that you will teach me my lessons in surgery, and my operations; but in that, I believe, you are a little mistaken, for my education has been quite after another fashion. I have learned my art, not in my closet; no, nor by hearing the discourses of physicians, though that also I have not despised; but in the Hôtel-Dieu, where I lived for three years, seeing many diseases, and practicing many operations upon the living body, and learning also much anatomy by dissection of the dead." "But," continued he, "I have yet more to boast of, for being called into the service of the kings of France, I have, in my time, served four successive kings, having followed them in battles, skirmishes, and assaults; sometimes I have been in sieges, and sometimes shut up with the besieged, curing their wounds." * * * "And last of all, I have lived in this great renowned City of Paris many long years, where, thank God, I have been held in some repute, and ranked, at least, equal with my peers, insomuch that there have been few difficult or celebrated cures in which my head and hand have not been employed. How, seeing these things, dare such a man as you, who has made surgery no part of your study, talk of teaching me?"

These persecutions were excedingly annoying to Paré, whose sensitive mind and proud temper ill qualified him to cope with such adversaries. They declared not only that the application of the ligature was injurious, but that it had been used centuries before, and they almost compelled him to acknowledge his errors by making him seek for traces of his discovery in the writings of Celsus, Galen, Avicenna, and other ancient authors. The result of all this malice and opposition was that few of his contemporaries or immediate successors adopted the practice, which, consequently, soon fell into total neglect. They would rather continue to cauterize arteries and to scald stumps after amputation of the limbs than to have recourse to the ligature. This is so much the more suprising when it is recollected that many of them were eye-witnesses to the success of Paré's practice, and with what care and judgment he laid down the rules for the ligation of the vessels; rules which, with a few trivial exceptions, are still in force in the schools.

Of the value of the ligature in suppressing hemorrhage, it would be folly at the present day to speak, when its claims are so universally established. There is no mode of treatment which can be employed as a substitute; styptics and compression, so much in vogue even as late as the last century, are, as a general rule, wholly inadequate for the purpose; and, as to acupressure, recently introduced to the notice of the profession by Professor Simpson, of Edinburgh, its value as a ready, available hemostatic agent, remains to be determined. Had it not been for this great discovery, it is easy to perceive that many of the operations performed by modern surgeons could never have been attempted without the risk of destroying the patient by hemorrhage. The contemporaries and immediate successors of Paré, by their opposition to the ligature, greatly retarded the progress of surgery, and were thus guilty of the loss of innumerable lives. Paré himself was justly proud of his discovery; but, with the modesty of true genius, and the inspiration of piety, he arrogated nothing to himself, but ascribed all to God. "For the good of mankind, and the improvement and glory of surgery, I was inspired," says he, "with this good thought."

But the application of the ligature for the arrest of hemorrhage was not the only improvement effected by this great man. He was the first to lance the gums in difficult dentition, his own infant daughter being the patient; to employ the twisted suture in the operation for hare-lip; to extract cartilaginous concretions from the knee-joint; and to reduce dislocations of the shoulder by placing the heel in the axilla, a practice so much and so justly in use at the present day.

He was a warm advocate of the use of the bandage, which he applied with much benefit in the treatment of a great variety of affections; and he invented a number of instruments, as well as several ingenious apparatuses. His writings contain the first account of what has since been known as Hey's saw, and of the club-foot boot, claimed to have been first devised by Mr. Syme, of Edinburgh. Among the more curious novelties, as they were doubtless then considered, are delineations of artificial legs, hands, and noses, the latter of which, especially, might perhaps be occasionally beneficially employed at the present day. In short, it is impossible to peruse his works without being struck with the astonishing variety and fertility of his resources.

His skill as an operator must have been very great, for he was an excellent anatomist, and thoroughly trained in the use of instruments. But it was particularly as a therapeutist that his knowledge and sagacity appear to the best advantage. He effected many wonderful cures, both in civil and military practice, and it was this circumstance that gave him such a commanding position among his contemporaries.

As a military surgeon, he was far in advance of his age, both at home and abroad. When he entered the service, he found the army without any regular medical organization, and very few of those that were wounded ever recovered, for all gunshot injuries were at that time, as they had been long previously, regarded as of a poisonous character. Determined to improve the condition of the troops as much as possible, he soon succeeded in deducing order out of confusion, and of placing the service in a position which it had never attained before. The practice then universally was to pour boiling oil into all wounds made with fire-arms. Paré saw that this treatment was not only intensely painful, but that it invariably aggravated the complaint so that very few patients recovered. He accordingly instituted a milder system of medication. During the campaign in Italy, learning that there was a surgeon at Turin celebrated for curing gunshot wounds, he paid him the most assiduous attention for more than two years, in order to obtain from him his famous secret. His career as a military surgeon extended from 1536 down to the battle of Moncontour, in 1569, a period of thirty-three years. No man in the army was ever more beloved, more popular, or more useful.

History furnishes but one similar example of such remarkable popularity. It is that of Larrey, Surgeon-in-Chief of the Grand Army of Napoleon, whom he followed, like a guardian angel, in all his military campaigns, and who pronounced him in his last will the most virtuous man he had ever known. During the retreat from Russia, when the soldiers, exhausted by cold, hunger, and fatigue, were obliged to seek their safety in flight, a river had to be crossed by two temporarily constructed bridges. "But not the troops alone were hurrying over. With the soldiers, and horses, and artillery," says Dr. John Bell, who has so graphically described the scene in his "Medical Heroism," "crowded on unhappy fugitives from Moscow, with their wives, and children, and baggage. In the advancing multitude Larrey was recognized, and immediately a thousand voices exclaimed, 'Let us save him who has saved us. Let him come forward.' All stop at once in their wild rush; Larrey is allowed to reach the bridge, and he is suddenly raised in the arms of the nearest soldiers, and passed from hand to hand, until he is, in this manner, carried entirely across the river. He is saved just at the moment when the bridge gives way, and a crowd of human beings, of both sexes and all ages, together with horses, and cannon, and military wagons, are precipitated into the half-frozen stream beneath, most of them never to reach its banks, never to breathe again."

One of the most interesting portions of Paré's writings is that which relates to his military travels, or, as he terms them, "the voyages made into divers places." This is preceded by an "Apology," in which he attempts, by an appeal to the results of his practice, to defend himself against the aspersions of his enemies respecting the use of the ligature, and nothing could certainly be more satisfactory or triumphant, refuting as he does, completely and thoroughly, all the flimsy and ridiculous charges preferred by their leader, the base and unscrupulous Gourmelen.

The object he had in preparing an account of his travels was to place before the public, in a full and authentic form, his experience as a military surgeon, as well as his observations on the various sieges and battles of which he was an eye-witness He thus foreshadowed a species of literature which has since been so happily elaborated by Larrey in his "Memoirs of Military Surgery, and Campaigns of the French Armies." He details most of the events which he saw with circumstantial minuteness, and, from the remarks which he occasionally drops, it is only too evident that the "Treatise" was written under a kind of necessity, his enemies having openly pronounced many of his oral statements as false, to so shameful an extent did they carry their malice against everything done and uttered by this great man. But all this opposition, here as elsewhere, was in vain. The curs of the profession might bark at and annoy, but could not seriously hurt him. The shafts of their envy recoiled only the more fiercely against themselves.

In performing these military journeys, Paré lost no opportunity of inspecting whatever was of interest in the regions of country through which he passed, and of making the acquaintance of distinguished professional men, with a view of obtaining from them a knowledge of the peculiarities of their practice, and such other information as might be of use to him in the prosecution of his various labors. Like a busy bee, he tried to extract honey from every flower.

Paré never wore the professor's gown and cap, and it was perhaps well he did not; for in those days medical and surgical teaching could certainly not have offered much inducement to any one, much less to a court surgeon.

The personal character of Paré is full of interest. His stature was tall, his figure slender, his countenance grave and dignified. The portrait in his works represents him in his court dress, with a collar on his neck.

Piety formed a prominent trait in his mental constitution, and upon no occasion did he omit to glorify God, always ascribing the wonderful cures which he effected to his immediate aid and interposition. The expression, "I apply the remedy, or I dress the wound, and God cures," occurs in various portions of his writings, and has been inscribed in large letters underneath his statue in the School of Medicine at Paris. In critical cases demanding unusual skill, it was not uncommon for him to pray in private for the success of his remedies. Thus, when he was sent for at a considerable distance from Paris, to attend the Marquis of Auret, who, seven months previously, had been desperately wounded in the lower part of the thigh, and who was then almost exhausted from the effects of numerous consecutive abscesses, before he made any prescription he appealed to Heaven for a blessing upon the means he was about to employ for the relief of his illustrious patient. "Notwithstanding, to give him courage and good hope, I told him," says Paré, "that I would quickly set him on foot, by the grace of God, and the physician's and surgeon's help. Having seen him, I went a walking into a garden, where I prayed to God that he would give me grace to cure him, and that he would give a blessing to our hands and medicaments, to combat against so many complicated maladies."

It is related that he attended without distinction the rich and the poor, and that he made no difference, in this respect, between the Huguenots and Catholics—a circumstance which speaks volumes of praise in favor of his humanity, when we recollect the deadly hatred that existed between these two classes of Christians, he himself espousing the cause of the former.

Although naturally of an amiable disposition, his incessant occupation, both mental and physical, rendered him, at times, irritable; but his anger always speedily subsided, and he never failed, when he thus betrayed his weakness, to ask pardon for the "good old man," the soubriquet by which he was universally known throughout Paris.

In studying the works of Paré, the reader is struck with the air of vanity which pervades their pages, and, at times, is quite obtrusive; the pronoun I is of frequent occurrence, and it is very evident, in many places, that he even likes to magnify his self-importance; but his vanity, after all, is perfectly innocent, for he never praises himself at the expense of others. On the contrary, he always speaks well of his brethren, and sometimes takes special pains to step out of his way to compliment them. He was particularly kind and considerate to young surgeons, especially those who had been his own pupils, doing everything in his power to promote their interest.

Another salient trait in his character was industry. He was never idle; he loved to work, and was never so happy or contented as when he was occupied upon some literary enterprise. From the age of twenty-eight to seventy-three he labored incessantly with his pen. In consequence of the early defects of his education, which his subsequent studies never entirely surmounted, he composed with difficulty, and many of his writings, especially those of his younger days, display an evident want of correct scholarship. A knowledge of the Latin language, then so common among the learned, he never acquired, and he was consequently obliged to avail himself of translations.

His cabinet of curiosities was large, and contained many rare and valuable specimens; among others, a dissected and embalmed human body, a double fœtus strongly resembling the Siamese twins, a uterine mole weighing nine pounds, and the skeleton of an ostrich prepared with his own hands. Like John Hunter, who seems to have inherited many of his great qualities, Paré possessed a great fondness for natural history, and omitted no opportunity to gratify his taste, for we find that his collection comprised contributions not only from Europe, but Asia and Africa. His library was extensive and well selected, and he continued to make additions to it up to the time of his death.

Notwithstanding his expensive outlays, Paré was rich. His lucrative practice, his salary as first surgeon to the king, amounting to 600 livres a year, and the proceeds from the sale of his works, yielded him a large income, enabling him to support a hotel in one of the fashionable streets of Paris, and a handsome country residence in the neighborhood, where, in the midst of his family and his intimate friends, he was wont to spend his nights and his Sabbaths, after the manner of some of our modern surgeons. His disposition was eminently cheerful, and late in life the intervals of his study and toil were often beguiled by watching, with a child-like simplicity and delight, the movements and merrymaking of some little birds, probably canaries, which he had been instrumental in taming. His gayety never forsook him; even amid the horrors of war his pleasantry and mirthfulness served to mitigate the hardships of the soldiers.

Paré had many friends, and no one ever enjoyed in a higher degree the favor of his sovereign, or the confidence of the public. The fact that he was successively surgeon-in-chief to four kings shows how well his moral and professional qualities were appreciated at the French court, in an age when virtue and learning were not always estimated according to their just value. Every one loved the "good old man," and there were few among the great, the wealthy, and the refined who did not consider it a privilege to do him honor. His name throughout Paris, and even in the provinces, was familiar to every one as a household word, and poets delighted to celebrate his virtues in their verses, some of which, with an amiable vanity, he inserted in his published works.

But, although Paré had many friends, he had also numerous enemies; enemies who hated him with a bitter hatred, and who continued their relentless opposition to him to the very borders of the grave. They could never forgive him for the influence which he had obtained over his sovereigns; for the revolution which he effected in the treatment of wounds and operations, by the application of the ligature to the suppression of hemorrhage; for the admirable works which he had produced; and for the elevated social and professional position he enjoyed. They even accused him of having attempted the life of King Henry III. by poison, when, in 1575, that monarch labored under a violent attack of otalgia, accompanied by high delirium, which the ignorant and credulous were not slow to ascribe to the effects of some toxic agent, but which was no doubt due merely to an extension of the disease of the ear to the brain. The belief that the king had been foully dealt with was extensively prevalent, but Paré readily established his innocence by proving that he had applied no remedy except in the presence of the court physicians, several of whom, however, were extremely jealous of his influence, and treated him with the basest ingratitude.

It would be folly to deny that Paré was altogether exempt from the failings of the age in which he lived. He would have been more than man if he could have freed himself completely from the shackles of superstition and credulity which formed such striking features in the human mind of the sixteenth century.

He talks of "monsters occasioned by the craft and subtlety of the devil," and mentions "by what means the devil may deceive us." "Our minds," says he, "involved in the earthy habitation of our bodies, may be deluded by the devils divers ways, for they excel in purity and subtilty of essence, and in the much use of things: they challenge a great pre-eminence, as the princes of this world, over all sublunary bodies. Wherefore it is no marvel if they, the teachers and parents of lies, should cast clouds and mists before our eyes from the beginning, and turn themselves into a thousand shapes of things and bodies, that by these jugglings and tricks they may shadow and darken men's minds." Such sentiments as these need not astonish us when it is remembered that Paré lived in the worst age of the Inquisition, when men almost everywhere believed in magic and witchcraft, when thousands of pilgrims annually visited the Holy Land to expiate their real or imagined sins, and when the Great Reformer, in the quiet recesses of his study, did not hesitate to throw his inkstand into the face of the devil. Our only "marvel" would be if he had been free from them.

His book "of monsters and prodigies," the twenty-fifth of Johnson's edition of his collected works, is a singular medley of erudition, credulity, and superstition, sadly illustrative of the low stock of knowledge in the fifteenth century, and of the gross darkness which enslaved even the best minds of that period. In this book he gives, among many other curious figures, that of an Italian woman who is said to have produced twenty children at two births, nine at the first and eleven at the second; and in the same paragraph he relates, apparently with the most perfect confidence in its truthfulness, the still more remarkable case of the Countess of Virbostans, who brought forth at one accouchement thirty-five living children!

But, notwithstanding these unmistakable evidences of his weakness, it may confidently be asserted that he was far in advance of his time, both in his moral culture, in his professional attainments, and in his practical skill. These defects in his character were the necessary result of the age in which he lived, from whose trammels it was impossible for him wholly to free himself. They formed part and parcel of his mental constitution.

There is but one blot upon the name of Paré, a stain which, as an admirer of this great man, I would fain wipe out, but to which my duty as an impartial historian compels me to advert. Strange to say, Paré himself records the fact, and that too, apparently, without any idea of the blame likely to be attached to it by posterity. The circumstance to which I allude is simply this. At the siege of Hedin, in 1553, Paré, who had been sent with the army, seeing, to use his own language, "about fourscore whores and wenches of the enemies," engaged in drawing water, he prayed the commissary of artillery to discharge his cannon upon that roguish company; but "he made me," says Paré, "much denial, answering me that such kind of people were not worth the powder they should waste. Again I prayed him to level the cannon, telling him the more dead the fewer enemies, which he did, through my request, and at that shot fifteen or sixteen were killed and many hurt." Whether this act was the result of mere wantonness, or of a fanatical idea that he would really be rendering his country an important service, by getting rid of this "roguish company," the mind equally revolts at it, and seeks in vain to reconcile it with the character which Paré had always sustained for piety and benevolence.

As an offset to his conduct on this occasion, may be mentioned the following anecdote, which exhibits his humanity in the most beautiful light. I shall give it in his own words. "A party," says he, "had gone out to attack a church where the peasants of the country had fortified themselves, hoping to get some booty of provisions; but they came back very soundly beaten, and one especially, a captain-lieutenant of the company of the Duke de Rohan, returned with seven gashes on his head, the least of which penetrated through both tables of the skull, besides four sabre wounds in the arm, and one across the shoulder, which divided one-half of the shoulder-blade. When he was brought to the quarters, his master, the Duke, judged him to be so desperately wounded that he absolutely proposed, as they were to march by daylight, to dig a ditch for him, and throw him into it, saying that it was as well that the peasants should finish him. But being moved with pity, I told him," says Paré, "that the captain might get cured. Many gentlemen of the company joined with me in begging that he might be allowed to go along with the baggage, since I was willing to dress and cure him. This was accordingly granted.

I dressed him, and put him into a small, well-covered bed, in a cart drawn by one horse. I was at once physician, surgeon, apothecary, and cook to him, and, thank God, I did cure him to the admiration of all the troops; and out of the first booty the men-at-arms gave me a crown a piece, and the archers half a crown each."

He was a man of the most incorruptible character, and, withal, most warmly attached to his friends, especially his sovereigns, whom he was ever ready to serve in everything that was just and honorable, following them to camp, or remaining at home, as might be most conformable to their wishes. In those days the French court was constantly surrounded by political intriguers, who lost no opportunity to weaken the king's influence with his subjects, or even to destroy his life. It was for the latter purpose that a powerful princess tried to inveigle Paré into her criminal designs, although, knowing the purity of his character, she hesitated a long time before she ventured to reveal to him her wishes. His reply showed the nobility of his soul, at the same time that it administered a most withering rebuke: "Madam," said he, "the idea that you could think me capable of such an act, ought to make me weep the remainder of my days."

Paré spent the evening of his life in tranquillity and resignation, calmly and philosophically awaiting the approach of death. He was still, however, far from being idle, for we find him almost daily engaged in writing corrections on the margins of the fourth edition of his works, and in elaborating his treatise on fevers, which was discovered among his papers long after his death, which occurred on the 20th of December, 1590, in the eighty-first year of his age.

Of his domestic life very little is known. He was twice married, the first union being without offspring, while the second was blessed with two daughters, of whose history, unfortunately, we are ignorant. In 1804, Bonaparte, then First Consul, full of just appreciation of all kinds of merit, instituted special inquiry at Laval with regard to the Paré family, in the hope of being able to render them some service, but without success. It was asserted as late as 1830 that the house once occupied by them at Amsterdam was still to be seen, with the inscription over the door, "here dwelled the descendants of Ambrose Paré," but upon careful search being made no such residence could be found.

The father of French surgery was almost forgotten, or, if not forgotten, hardly ever mentioned, when, in 1812, the Medical Society of Bordeaux proposed, as its prize, a eulogy upon him, which was awarded to Dr. Vimont, and it also projected the publication of a new edition of his works, which, however, was never accomplished. Subsequently the Grand Council of Mayenne proposed the erection of a bronze statue to him at

Laval, after a design by the celebrated artist, Mons. David; but whether this intention was ever carried out or not, my information does not enable me to say.

Paré had two professional contemporaries who, in their respective spheres, occupied nearly the same position as he did in surgery. The first was Fernelius, the restorer of medicine in the sixteenth century, and one of the first physicians who, after Galen, wrote well on the nature and cause of diseases; the other was Vesalius, of Holland, still more celebrated as the father of modern anatomy. In Germany flourished Paracelsus, that compound of science, eccentricity, and charlatanism, which have made his name famous throughout the civilized world. These men were all distinguished by peculiar traits of character which will render their names forever memorable in the history of human exploits.

Fernelius, a Frenchman by birth, after having received a most thorough classical, mathematical, and philosophical education, studied medicine at Paris, and soon distinguished himself as a successful practitioner. His business is reported to have annually yielded him ten or twelve thousand livres, and as he rapidly became rich his enemies did not hesitate to accuse him of avarice. His love of study was excessive. He worked habitually not less than nineteen hours out of the twenty-four; and when one of his friends remonstrated with him on the folly of his conduct, by telling him that such labor and watching would shorten his life, his reply was: "*Longa quiescendi tempora fata dabunt.*" Arnauld, the friend of Pascal, uttered a similar sentiment: "Why don't you rest sometimes?" said his friend, Nicole, to him. "Rest! why should I rest here? haven't I an eternity to rest in?" Fernelius was physician to Henry II. of France, and the author of numerous works, some of which passed through more than thirty editions. Bordeu, his great admirer, thus pithily sums up his character: "Fernelius," says he, "appears like a great light penetrating the thick darkness of his age; never had so elegant an author adorned our chairs; never had genius so gracefully and so ably written on medicine. France has had many great physicians, but none at all comparable to Fernelius."

The history of Vesalius is invested with a melancholy interest. Born at Brussels, in 1514, only five years later than Paré, he early commenced the study of medicine, and rapidly distinguished himself by his passion for dissection, which, on account of the difficulty of procuring subjects, often involved him in many strange adventures. In that age there were no resurrectionists, a body of men so much valued at the present day. Vesalius and his students were obliged to dig up their own subjects, and even sometimes to climb the gibbet in pursuit of the mouldering carcass of the murderer, glad to get any material, however disgusting, to enlarge their anatomical knowledge. Occasionally, as a great favor, criminals were sent from the court and placed at the disposal of the anatomist, with the privilege of dispatching him with poison! Such a statement would not be credited at the present day, if it were not vouched for by one of their own body, Fallopius: "The prince," he says, "ordered a man to be given us, whom we killed in our fashion, and then dissected—*quem nostro modo interfecimus et illum anatomizavimus.*" The article usually employed was opium, in the dose of about two drachms. On one occasion this quantity was administered without any effect, owing, as was supposed, to an attack of intermittent fever. The dose, however, being repeated soon after, the man died. How long this scientific "burking" continued in vogue history does not record.

Vesalius, after having served for two years in the army in the capacity of physician and surgeon, was invited, at the age of twenty-five, to the chair of anatomy in the University of Pavia, where he remained until 1543. He then lectured successively in the schools of Bologna and Pisa, and, in 1544, was appointed physician to Charles V., an office which compelled him to take up his residence at Madrid. Here, in the midst of a most brilliant career, caressed by the court, and beloved by the people, he was seized with nostalgia, which so preyed upon his mind as to induce him to quit Spain. Anxious to conceal from the king the real cause of his distress, he based his resignation upon a desire to visit Jerusalem, in fulfillment of a vow made in early life. Having obtained an honorable discharge, he set out upon his journey, and in due time reached his destination. While there, engaged in contemplating the scenes of the Holy Land, and in studying the character of his fellow-pilgrims, he received the offer of the chair of anatomy in the University of Padua, rendered vacant by the death of his illustrious pupil, Gabriel Fallopius. Glad of an opportunity of returning once more to Italy, he embarked for Venice, but the vessel which carried him was wrecked off the Island of Zanthe, where, in October, 1564, at the age of fifty-eight, he perished from hunger and distress of mind.

Until recently it was generally believed that the real cause of the visit of Vesalius to the Holy Land was an accident which befell him in examining the body of a Spanish nobleman, one of his patients, who died of some obscure disease of the heart. On exposing the chest, this organ, it was asserted, was found to palpitate, thus showing, to the great horror of all present, that life was not entirely extinct. The result was that Vesalius was accused of homicide, and, but for the interposition of the king, who commuted his sentence to a pilgrimage to the Holy Land, he would have been consigned to an ignominious death.

Unfortunately for this story, whose character largely partakes of the romantic, it is entirely destitute of truth. Mons. Burggraeve, Professor of Anatomy in the University of Gand, in his work on the life and writings of Vesalius, published in 1841, and so ably analyzed by Dr. La Roche in the last January number of this journal, has proved the whole charge to be the merest fiction, fabricated by the professional enemies of this great man for the purpose of wounding his feelings and casting reproach upon his reputation. The real motive which induced him to visit the Holy Land remains involved in mystery. Some pretend that the nostalgia of which he complained was a mere pretext to escape from a court for which he had no respect, and in which he was surrounded by jealous and unscrupulous rivals; others assert that his wife, who seems to have been a second Xantippe, was the cause of it. However this may be, no one can help regretting the sad fate which awaited him on his passage home, and which deprived the world of the services of so illustrious an anatomist at a time when they were so much needed.

Vesalius was the first physician, after the commencement of the Reformation, who had the boldness to engage in human dissections, and to make an effort to free anatomical science from the yoke imposed upon it by the ancients. Until his time the authority of Galen and others was regarded as of far greater value than the observation of nature. The man who had the courage to think and act for himself was viewed as a heretic, fit only for the stake. Vesalius, despising the writings of his predecessors, devoted himself incessantly to human dissections, and before he was thirty years of age published his great work on anatomy, illustrated by numerous plates, engraved on wood, from drawings made by the most accomplished artists. A new edition of this immortal production, comprising his treatise on surgery, was issued under the supervision of Boerhaave and Albinus, at Leyden, in 1725, in two splendid folio volumes.

With these illustrious men Paracelsus had few points in common. To talents of a high order, and unquestionable science, he added all the elements and practices of a daring, impudent quack. His very name, in fact, savors strongly of charlatanism. His signature, Philippus Aureolus Theophrastus Paracelsus Bombastus, of Hohenheim, written in full, must have excited the wonder and admiration of many a country man, and served as a flaming advertisement to his boasted skill in the cure of diseases. Born at Einsiedeln, Switzerland, in 1493, he already enjoyed great fame when Paré entered the profession. In 1526, at the suggestion of the learned Erasmus, who had been his patient, and who had conceived the most unbounded respect for his talents and skill, he was appointed Professor of Medicine and Surgery in the University of Basle; and his first official act was to light some sulphur in a brazen chafing dish, and to throw into the flame the works of Galen, Rhazes, and Avicenna, exclaiming, "Sic vos ardebitis in gehennâ!" This act, together with the singularity of his manners, and the boldness of his denunciations of the doctrines of his predecessors, the most enlightened of whom he declared did not know so much as his shoe latchets, rendered him a great favorite with the students. His popularity, however, was of short duration; for a dispute arising between him and the trustees of the school respecting the amount of his salary, he resigned his chair in less than a year, and thenceforth pursued a nomadic, dissolute life, wandering about from village to village, and spending whole nights and days in drinking with the lowest and most debauched persons. In short, he became what, at the present day, would be called a rowdy. Amid all this dissipation, however, he still maintained his reputation by the occasional achievement of extraordinary cures. He boasted that he had invented an elixir by which he could ward off all bodily ailments and indefinitely prolong his life; but while thus vaunting his own praises, he was seized with a fever, of which, in a few days, he died, in the forty-eighth year of his age, thus falsifying his silly and wicked pretensions.

Paracelsus, notwithstanding his dissipations and his many charlatanries, rendered important service to science. He was unquestionably an able chemist and an excellent practitioner, as is proved by the fact that he made a number of important discoveries, among others that of antimony, and that he effected many brilliant cures. His works, which were published after his death in ten quarto volumes, show him to have been a man of great industry and erudition. His treatise on surgery was, in many respects, much in advance of his age. Von Helmont regarded him as a god-send, endowed with vast knowledge and skill, "the forerunner of true medicine," and "the jewel of all Germany;" while Zimmerman declares him to have been a man of the most vulgar tastes and practices, who "lived like a hog, looked like a carter, and found his chief pleasure in the society of the lowest and most debauched of the rabble."

If we cast a retrospective glance at Great Britain, it will be found that she had not one great physician or surgeon during the professional lifetime of Ambrose Paré. Linacre, who died in 1524, after having taken an active part in the institution of the Royal College of Physicians, had given a salutary impulse to medicine; but that impulse was of short duration, for the mantle which he had so long and so gracefully worn did not find one worthy successor. He himself, indeed, left no original additions to the medical literature of his country. His principal contribution was a translation of the works of Galen into Latin, highly esteemed for the purity and elegance of its diction. He was physician to Henry VII. and Henry VIII., founded lectureships in physic at Oxford and Cambridge, and rendered various other important services to medicine, for which his name will always be held in respectful remembrance by Englishmen.

Gradually, however, new light began to break in, and Great Britain effectually aroused from her heavy slumber. The soil which had so long been fallow now produced abundantly, beginning with William Harvey, the discoverer of the circulation of the blood, and Richard Wiseman, a man of real science, a close observer, an able writer, and the greatest military surgeon of the day. These illustrious *savans* opened, as with the magician's wand, the fountains of physiological, medical, and surgical knowledge, and thus imparted an impulse to the healing art, the salutary effects of which cannot be too highly appreciated.

In Italy, during the latter period of the career of Paré, flourished Taliacotius, the great autoplastic surgeon, celebrated for his skill in making new noses, lips, and ears; a man of great science, far in advance of his time. The manner in which he performed his operations was much misrepresented, many alleging that the supplemental structures were borrowed from the arm or breast of another person. The English poet, Butler, sarcastically alludes to the circumstance by observing, in his Hudibras,

> "That when the parent stock died out
> Off dropped the sympathetic snout."

The history of Paré affords many points for reflection. It demonstrates, in the first place, the power of ambition and genius over obscurity of birth, poverty, and defective education; and, secondly, the rewards which follow a life of virtue and of steady devotion to one particular pursuit. His motto, afterward transferred to the title-page of his works, was "labor improbus omnia vincit," and nobly and faithfully did he carry out its behests. No man ever worked harder than he, or with an eye more single to the advancement and honor of the profession which he so ardently loved, and to which, early in life, he resolved to dedicate his whole soul and service. His toils and his fidelity, continued through a period of upwards of sixty years, have earned for him a conspicuous niche in the temple of fame, and the glorious title, accorded to him by the common consent of posterity, of the Father of French Surgery.

> "He was not of an age, but for all time,
> Dear son of memory; great heir of fame."

Bi-Monthly Abstracts;

OR, BI-MONTHLY NOVELTIES IN MEDICAL, PATHOLOGICAL, SURGICAL, OBSTETRICAL PHYSIOLOGICAL, AND CHEMICAL SCIENCE.

SURGERY.

BY JOHN H. PACKARD, M.D., OF PHILADELPHIA.

I.—*Pulsating Tumors in the Orbit.* By Joseph Bell, M.D., L.R.C.S., etc. (Edinburgh Medical Journal, June, 1861.)

A detailed history of a case of this kind, successfully treated by Mr. Syme, at the Edinburgh Royal Infirmary, is given by Dr. Bell, who thus analyzes it: "A young woman, previously healthy, is suddenly seized with pain in the head, followed by an equally sudden snap, or crack, inside, resulting from no injury, but causing great deformity. A noise in her head, audible to herself and others, loud and persistent, renders her life miserable by its weary sameness, and the confusion of ideas which it creates. The tumor is rapidly increasing; vision, first rendered double, begins to fail entirely; the walls of the orbit are absorbed, and the patient's health rapidly undermined. Palliatives are of no use. Medical aid has failed. The carotid is tied; a perfect cure results; truly a triumph of surgery."

The pathology of this affection is less settled than the indications for its treatment. Dr. Bell seeks to throw light on the former point by consulting the symptoms and results of treatment in the recorded cases, and the post-mortem appearances in such as proved fatal.

(1) *Previous Cases.*—These are about twenty in number. Five of them correspond in every particular to that given by Dr. Bell; of these, two are reported by Mr. Nunneley, of Leeds, in vol. xlii. of the London *Medico-Chirurgical Transactions;* one by Mr. Travers, of London, in vol. ii. of the same; one by Mr. Dalrymple, of Norwich, in vol. vi. of the same; and one by M. Jobert, of Paris, in the *Mémoires de l'Acad. Royale de Médecine*, vol. ix.

"In very minute particulars these six cases correspond. Their principal characteristics are the following: The ages of the six varied from 22 to 65 years, but in all the health was weakened or impaired previous to the attack. Three of the five females were pregnant when the disease commenced; of the others, one was in delicate health, and the last was well advanced in years. M. Jobert's case was a bronchitic gentleman, 60 years old. In every one of the six cases, the suddenness of the pain was most remarkable; and in four of them, a loud noise, like the discharge of a gun, or the crack of a whip, was most distinctly heard and described by the patients, 'as if something' (to use the words of one) 'had given way inside of the head with a sudden snap;' and in all the cases this occurred spontaneously, without any blow, fall, or great exertion. This is a very remarkable symptom, and distinguishes these six cases from another set, which resemble them in many other respects. In all these six cases, the eyeball was protruded, and there was a pulsation communicated to it. In all six there was a well-marked bruit, described differently, as 'bellows-murmur,' 'rippling,' 'buzzing,' and 'muffled engine-stroke.' In all the pain was intense; in all the vision was impaired; in two partially, in four completely gone in the affected eye. In every case the eyelids were puffed and œdematous, and the conjunctival vessels injected. This is an important symptom, as tending to prove the existence of some obstacle to the venous return. In all six cases the common carotid was ligatured on the affected side; and the operation was followed in five cases by a complete cure of the disease, and in the other, by remarkable head symptoms, secondary hemorrhage, and death, though the immediate effect of the ligature in it also was to relieve the symptoms. The morbid appearances in the fatal case will be noticed hereafter.

"The cases of Travers and Dalrymple were called by their authors 'Cases of Aneurism by Anastomosis of the Orbit,' and as such they have been quoted by all succeeding writers on the same subject, until Mr. Bush, in the 22d, and Mr. Nunneley, in the 42d volumes of the *Medico-Chirurgical Transactions of London*, disputed the accuracy of this pathology, and substituted the name of 'Aneurism in the Orbit,' and 'Aneurism of the Orbit,' respectively. M. Jobert's case is called an aneurismal tumor, and is said to have had the 'susurrus' heard in varicose aneurisms; but of the existence of a varicose aneurism there is no evidence, nor from the result is there the slightest probability.

"Another series of cases of pulsating tumor in the orbit, while resembling each other very closely, differ in several important particulars from the first series. These are reported by Messrs. Bush, Scott, Curling, Velpeau, and Nunneley. These all occurred in males of middle age; and in the history of each, its origin was traced to some distinct and severe injury—either a blow or a fall—thus differing from the first six, which were all of spontaneous origin."

In all the cases of this second series except one, the protrusion of the eyeball and the pulsation increased very gradually, and none of the patients could give the exact date when he first noticed either pain or swelling. In all, ligature of the carotid was successful; in one, however, only for a time.

(2) *Post-mortem Appearances.*—Only two fatal cases can be adduced; one under the care of Mr. Nunneley, the other under that of Mr. Bowman.

"In Mr. Nunneley's case, the symptoms were particularly well marked. Sudden crack, as of a gun, when the patient was stooping; great pain and buzzing in the head; protruded eyeball and swollen lids; sight gone; distinct bruit, and decided pulsation. The artery was tied, with immediate cessation of the symptoms. The patient died sixteen days after the operation, and the following was found: 'The ophthalmic artery was considerably dilated; its coats thickened with atheromatous patches; two of its branches, particularly the inner, or the continuation of the trunk toward the inner angle of the orbit, were distended and filled with coagulum; the outer, or lachrymal branch, was also large, and filled with coagulated blood, but not to the same extent as the inner. Before the operation, the bruit and pulse were most decided on the inner side. All the other branches, arteries and veins were so small as hardly to be observed.' No sign there of aneurism by anastomosis; and the dilated arteries with atheromatous patches, in a woman aged 65, were very much what might have been expected, even had there been no pulsation in the orbit. Outside the orbit, however, the following was found, the importance of which seems to have been underrated: 'The left carotid, on emerging from the bony canal at the origin of the ophthalmic artery, was decidedly enlarged, and filled with and surrounded by a nodule of coagulum about the size of a large horse-bean; the right carotid was normal.'

"In Mr. Bowman's fatal case, (not however reported by Mr. Bowman,) which seems to have been a well-marked one, and the symptoms of which were at once removed by the ligature, the report of the pathology is very shortly given. 'At the autopsy no aneurism was found to explain the symptoms present during life.'

"It is indeed very remarkable that in these two cases, in which the symptoms were well marked, the operation performed so far with success, and examinations obtained, really nothing to account for the symptoms was discovered in the orbit. Where, then, are we to look for the cause? In default of a better explanation, and with the greatest possible deference to the recorded opinions of such able observers as Travers, Dalrymple, and Nunneley, I am inclined to think that the aneurismal condition of the internal carotid, so well described by the latter surgeon, is a fact of the very greatest importance, and may, in part at least, account for the symptoms. I do not say in all cases of pulsating tumors of the orbit, but in some of them, especially in such a one as Mr. Nunneley's, where really nothing else was found. In it we have extensive pulsation and protrusion to account for; yet all we find within the orbit is a slightly dilated condition of a small arterial branch, while the other arteries and veins are hardly visible. And it must be remembered that, as the fatal termination occurred on the sixteenth day after the operation, in that period there was no time for any previously existing aneurismal tumor to disappear. Might not the condition of the internal carotid account for the symptoms? The coagulum, large as a horse-bean, must have occupied space which was formerly completely filled; the bony walls of the cranium cannot yield; the coagulum and dilated artery must find room—at the expense of what parts? The vessels which are close by must be compressed, especially the ophthalmic vein; for the artery is more protected in its foramen, than the vein in the sphenoidal fissure. The compressed vein prevents the return of the blood from the orbit, accounting for the venous congestion and injection specially noticed in every case. This, too, explains, as the theory of aneurism by anastomosis can never do, the suddenness of the pain, and the rapidity of the protrusion. In a case reported by Sir Gilbert Blane, dilatations of the internal carotids, much smaller than the one in Nunneley's case, produced the most violent symptoms—acute pain, noise, and blindness. In another, by Professor Dudley, the diagnosis was an endocranial aneurism, while the symptoms of pulsation and protrusion in the orbit closely resembled the present case; the carotid was tied with success. What is the cause of the disease? *Aneurism by anastomosis* must be rejected on these grounds: 1. It could never account for the suddenness of the symptoms, which is so remarkable a feature of nearly all the cases. 2. Aneurism by anastomosis is *not* curable by ligature of vessels. * * * * 3. In the cases examined after death, no aneurism by anastomosis was found.

"*Aneurism, true or false, in the Orbit.*—This may certainly be considered as the cause in some of the cases. * * * Aneurisms in the orbit, though rare, are to be found in the records of pathology. Mr. Guthrie records one case in which there was protrusion of both eyes, with a hissing noise in the head, and in which aneurisms of both ophthalmic arteries, as large as nuts, were found on dissection. Mackenzie also quotes two cases of aneurism of the arteria centralis retinæ—one with pulsation in the orbit, besides loss of sight.

"*Obstruction to venous return in the sphenoidal fissure, by endocranial aneurism, or other tumor*, may be allowed as a cause, at least, in the cases where no true aneurism could be found on dissection, and especially in those cases occurring after blows on the head, and in connection with other head-symptoms denoting internal mischief."

II.—*On the Circumstances of the Regeneration of Bone.* By M. SÉDILLOT. (Gazette Hebdomadaire, Aug. 23, 1861.)

In a letter to the President of the *Académie des Sciences*, in Paris, M. Sédillot remarks that he has, in several of his previous communications, endeavored to show that failures in the regeneration of bone occur at points where the periosteum has been attacked with suppurative inflammation; and he would thus explain the formation of cloacæ. Such facts prove the risk involved in dissecting up the periosteum from bony surfaces, since the almost inevitable suppuration will prevent the renewal of the bone, the embryonic cells being converted into pus-globules instead of into osseous tissue.

After detailing a case of necrosis of the femur, the author draws the following conclusions:—

1. Operations are preferable which do not disturb the relations of the periosteum with the subjacent bone. 2. Operations are objectionable in which the periosteum is dissected up or isolated. 3. Reformation of bone cannot be looked for from the periosteum detached from splinters at the seat of a fracture. 4. Nor from a "cuff" of periosteum left at the extremity of a bone in amputating a limb. 5. Nor in cases of pseud-arthrosis treated by resection, the periosteal sheath being preserved. 6. Nor in ordinary resections of the bones of the limbs, flaps of periosteum being isolated and retained in the wound.

III.—*Osteo-plastic Resection of the Upper Jaw.* (Foreign Correspondence of the London Medical Times and Gazette, Sept. 7, 1861.)

This operation was done by Professor Langenbeck upon a boy fifteen years of age, on account of a fibroid growth springing from the left pterygo-palatine fossa, and extending not only into the spheno-maxillary fossa, but also into the cavities of the nose and pharynx.

Chloroform having been administered, an incision was made from the left ala nasi, through the tissues of the cheek, to the middle point of the lower edge of the zygomatic process of the temporal bone. Another incision was then carried from the nasal process of the frontal bone, along the lower margin of the orbit, so as to meet the previous one at its posterior extremity. The first incision was now deepened so as to divide the subcutaneous tissues, the masseter muscle, and the buccal fascia. A lobular, white, shining tumor now became visible, extending between the external surface of the upper jaw and the coronoid process of the lower. The two jaws being now separated, the finger could be carried in between the upper jaw and the tumor to the pterygo-palatine fossa. The pressure of the tumor had so enlarged this fossa, as well as the spheno-maxillary, that an elevator could now be readily passed into the pharynx. A fine, straight, narrow saw was now passed in, and the upper jaw divided horizontally, the septum narium being protected from the point of the saw by the left forefinger, introduced from the mouth. The second incision was now deepened to the bone, and the saw carried through the zygomatic process and the orbital process of the upper jaw to the lachrymal bone. Nothing now held the resected portion of the upper jaw except its connection, by its nasal process, with the frontal and lachrymal bones; and this allowed of its being raised by means of an elevator, like a box-lid. In this way the spheno-maxillary and pterygo-palatine fossa, and the naso-pharyngeal cavity, were rendered easily accessible; and the tumor, which had no connection with the base of the skull, could be readily and wholly removed, the part situated within the pharynx being drawn out with a pair of strong forceps.

A good deal of hemorrhage occurred during the operation, on account of the dilatation of the arteries; but it ceased spontaneously. One ligature was applied, to the spheno-palatine or nasal artery, and the thread brought through the left nostril. The wound was then carefully cleaned, and the jaw replaced. Some pressure was necessary in order to keep the bone in place, and the edges of the skin were brought together by means of iron-wire sutures. A cerate dressing was applied, with a pad of charpie over it, and a bandage to keep everything in place.

The case subsequently went on very well. In a fortnight the wound had healed, and the appearance of the face was nearly normal; although there was imperfect paralysis of the orbicular muscle of the left eye, and anæsthesia of the parts supplied by the infra-orbital nerve and the derivatives of the spheno-palatine ganglion.

IV.—*Luxations of the Upper Extremity of the Radius.* By MM. BERNADET and BOUVIER. (Gazette Hebdomadaire, Aug. 23, 1861.)

M. Bernadet lately exhibited to the *Société de Chirurgie* of Paris a specimen taken from the body of a man aged seventy-two, showing a luxation backward and outward of the upper end of the radius. The lesion was of long standing, having been sustained by a fall on the hand when the patient was but twelve years of age. No attempt at reduction had ever been made. All the movements were free except that of supination, which was imperfect.

As was remarked, in connection with this specimen, by MM. Bauchet, Morel-Lavallée, and Demarquay, luxations of the radius backward are of easy reduction when recent, but can be remedied only with great difficulty, if at all, when they are old. M. Désormeaux added, that even after reduction it was very hard to retain the bones in place; he had seen the lesion reproduced. The degree to which the functions of the elbow-joint are maintained, in spite of luxation of the radius, is well known.

M. Bouvier exhibited at the succeeding meeting a patient in whom this integrity of function was remarkably displayed. The man, thirty-nine years of age, had sustained a luxation backward of the radius in each arm, so early that he thought the lesion a congenital one. All the movements of the joint were in this case very free. Extension and flexion were normal, or at least were within ten degrees of being complete. Pronation was perfect. Supination was slightly limited, the forearm describing in this motion two-thirds of a semi-circumference instead of a whole one. The power of the arm was very little impaired, the man easily performing his functions as a hospital steward.

The interest of this case is great, in reference to its etiology. Were these luxations congenital? Such was M. Bouvier's belief, in opposition to that of M. Malgaigne, who denies that luxations are ever congenital, because they have never been observed in the fœtus. M. Bouvier acknowledged that they were very rare in the fœtus, but thought M. J. Guérin had seen one, although he has not given a very exact description of it. The existence of a double lesion is in favor of the idea that it is congenital.

V.—*On the Reduction of Dislocations.* By PROF. BUSCH. (Foreign Correspondence of the Medical Times and Gazette, June 22, 1861.)

At a recent meeting of the Society of the Lower Rhine, Professor Busch gave an account of some experiments made by him in regard to the reduction of dislocations without traction. Having to treat a case of luxation of the head of the humerus, he tried powerful traction unsuccessfully, the patient being under the influence of chloroform. "As in this case the impediment was probably of the capsular ligament, and the place where it was torn was known from the origin of the dislocation, after the patient had recovered from the effects of chloroform, reduction was tried by making the cleft of the capsular ligament open by a simple lever-movement of the arm. After this had been done, rotation of the arm was sufficient to bring the head of the os humeri back into the glenoid cavity. The facility with which reduction was thus accomplished, while the most powerful traction had been of no avail, was so striking that a series of experiments on dead bodies was made, in which dislocations of the humerus and of the femur were artificially produced. In each of these dislocations, in which considerable traction was necessary to remove the dislocated head of the bone only a little way from its wrong position, reduction was always very easily accomplished by rotation of the limb, provided the following rule was adhered to: The limb must be brought into that position, in relation to the trunk, in which it was at the time of the origin of the dislocation, and the upper edge of the cleft of the capsular ligament must be removed from the lower one (or the anterior from the posterior one) by the head itself, so that the cleft of the capsule becomes open. For instance, in dislocation of the femur backward, the surgeon ought to stand on the sound side, and take hold of the dislocated limb by the heel; he should then make extension in the knee-joint, and flexion in the hip-joint to a right angle, or even beyond that; after this he should adduct the limb, and then rotate it outward. If, in artificial dislocation, the parts are laid bare at the posterior side, it is seen that the head of the bone is, by the flexion, removed from that position in which it was after the dislocation had been produced, and brought closer to the edge of the acetabulum, while by the adduction it is raised over the posterior edge of the acetabulum, so that the surgeon can put his finger between this and the head of the os femoris, so that rotation outward is sufficient for establishing complete reduction. The success of this method was most striking in the different forms of dislocation of the femur; and it is probable that, in the living man, it will have to be chiefly employed in cases where the position of the limb, in relation to the trunk at the time of the origin of the dislocation, and the position of the cleft of the capsular ligament, are known. Perhaps it will also be of use in old dislocations, as by making the cleft of the capsular ligament open, pathological productions, by which it has been narrowed, may be broken. Professor C. O. Weber has been led by his experiments to the same conclusions."

VI.—*Substitute for Cerate as a Dressing for Wounds.* By M. DÉSORMEAUX. (Parisian Correspondence of the Lancet, June 29, 1861.)

This dressing was exhibited by M. Désormeaux at a recent meeting of the *Societé de Chirurgie:* he obtained the formula for it from the dispenser at the Hôpital St. Antoine. Its chief feature is the absence of fatty ingredients, which are replaced by glycerin, properly thickened by the addition of starch. About one part by weight of starch to eight of glycerin is the best proportion. Boiling water is poured on the starch till it attains a clear, pasty, fluid consistence; the glycerin is then added, and the whole rubbed up for ten minutes in a mortar. M. Désormeaux has found this preparation wholly unirritating.

VII.—*On Cysts within the Femoral Canal simulating Femoral Hernia.* By CHRISTOPHER HEATH, F.R.C.S., etc. (Med. Times and Gazette, Sept. 7, 1861.)

Mr. Heath alludes to the fact that these cases are very rare, the only ones he has found recorded being those mentioned by Mr. Quain in the *Medical Times and Gazette* for Jan. 6, 1855, ("On some Unusual Circumstances met with in Operations for the Relief of Strangulated Hernia,") by Mr. Chevalier in the *Medico-Chirurgical Transactions*, vol. iv., and by Breschet, as occurring in Dupuytren's practice.

Two such cases came under Mr. Heath's notice within the space of two years. One was in a woman aged 70, operated on for a small femoral hernia on the left side; death from peritonitis ensued in forty-eight hours, and an autopsy showed that the returned mass was "a cyst evidently derived from the peritoneum, though now shut off from it, and containing, apparently, a mass of *appendices epiploicæ* derived from the large intestine, the malposition of which" (it was close to the femoral ring) "was no doubt congenital. On laying open the intestine, a slight puckering of the mucous membrane was visible opposite the attachment of the cyst. There was not the slightest trace of peritonitis near the seat of the operation, and the case must be regarded as one of unrecognized enteritis, complicated by the presence of a tumor in the seat of hernia."

The other case was that of a woman aged 35, who had been treated for a supposed hernia several times. Symptoms of strangulation being present, and the taxis failing, an operation was resorted to. "Upon dividing the layer which appeared to be the sac, I found that the contained tumor was too transparent for gut, drew it carefully out, and found it to be translucent, and clearly a cyst. I carried the finger to the upper part, to see if it was connected with the bowels, and with the nail tore through the tissues which seemed to form a neck for it, and was thus enabled to isolate and remove it. It was a cyst some two inches long and three quarters of an inch in diameter, constricted in the middle, and containing clear, amber-colored fluid, having apparently no connection with the peritoneum or intestine, but distinctly occupying the crural canal. I put in a couple of stitches and applied a bandage.

"The patient recovered without a bad symptom."

VIII.—*On Lithotomy in Children.* By MR. FERGUSSON. (Medical Times and Gazette, May 18, 1861.)

In connection with the case of a boy three years of age, operated on at King's College Hospital, Mr. Fergusson remarked that he preferred to introduce as large a staff as possible, since it did not matter about its being readily movable, as in the case of the sound. The introduction of a small staff required more care and skill, in order to know where the point of the instrument pressed. The point of a small staff might pass out of the urethra, and this, too, although its general direction appeared to be correct. This, he said, was not a mere theoretical objection, as he had known such an accident to happen in the hands of a very distinguished operator. Mr. Fergusson added, that if in the case in which he had just operated, he had not touched the stone with the staff, he would not have proceeded. In reference to lithotomy in children, he said it was a rule with him to take more time and care than with adults, as he felt certain that there was much more risk of getting wrong in the former. In children, the tissues were less firm, and the resistance was therefore less. The incision also was required to be on a smaller scale. He always endeavored to make as small an opening as possible into the membranous portion of the urethra, and only just notch the prostate, or leave it altogether untouched. The next step, the introduction of the finger into the urethra, was, however, the one in which the greatest mischief might be produced by want of care—mischief often irreparable. The membranous portion of the urethra, and the neighboring tissues, were in children easily torn, and the urethra might give way above as well as below the staff, so as, separated all round, to be pushed before the finger toward the bladder. The finger would then move about in the pouch thus formed, and the completion of the operation would be almost impossible. He had, however, known a surgeon retrieve himself even after this error, which he thought he himself had once committed; in that case, it took him some time to get his finger into the bladder.

Mr. Fergusson decidedly prefers the lateral method of operating; he has employed it in forty cases of children, with success in all but one.

IX.—*On In-growing Toe-nail.* By M. Wahu, of Nice. (Boston Medical and Surgical Journal, Sept. 19, 1861, from the Gazette des Hôpitaux.)

M. Wahu had long suffered from this affection, and had tried many remedies, among them alum and Vienna paste, in the hope of avoiding the necessity of the surgical removal of the nail. He was at length struck with the idea of drying up or tanning the diseased surface, and decided upon the perchloride of iron as the most efficient means for so doing. "I obtained some," says he, "in a powdered form, and insinuated it as deeply as possible between the free edge of the nail and the ulcers. I felt almost immediately a moderate sensation of pain, accompanied by a feeling of constriction and a strong burning sensation. A quarter of an hour after I attempted to walk, and to my great satisfaction I found I could bear my weight on my foot throughout its entire length, without the least pain; a thing which I had not done before for many months. The following day I carefully examined the diseased parts, and found them mummified and as hard as wood. I applied a fresh quantity of the perchloride, which I allowed to remain a quarter of an hour, but I have reason to believe that this application was useless, as the mummification was complete by the first process. I continued to walk without the least thought of my *ongle incarné*, and about three weeks after was able, by means of a foot-bath, to remove the hardened layer of skin, under which I found a tissue of new formation, which perfectly resisted the pressure of the edge of the nail. Shortly afterward, the whole had returned to its normal condition, and since more than two years have passed without a return of the disorder."

PATHOLOGY AND PRACTICE OF MEDICINE.

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I.—*Statistics of Prisoners: their Mental Condition and Diseases.* By J. B. Thomson, L.R.C.S., Edin., Resident Surgeon General Prison for Scotland at Perth. (Edinburgh Medical Journal, August, 1861, p. 136.)

In this interesting continuation of previous papers on the mental condition, etc., of prisoners, inquiry is made bearing upon two questions of great interest to medical psychologists, viz.: To what extent are crime and mental disorder allied, and what are the class-influences at work in the factorship of insanity.

The author thinks it has been proved in the preceding papers—1. That criminals are liable to numerous physical disorders and diseases, especially of the nervous system. 2. That as a class, criminals, compared to the common population, are generally of an inferior average intellect. 3. That (without including criminal lunatics) fully more than 12 per cent. of the average daily population are noted and reported by the medical officers of the General Prison of Scotland as laboring under imbecility, suicidal tendencies, epilepsy, or milder forms and degrees of mental weakness.

Dr. Thomson confines his remarks in this article to *Criminal Lunatics*, as illustrative of the mental condition of criminals as a class, and their liability to diseases and disorders of the mind. The subject may be presented under the following aspects :—

I. Of prisoners in the General Prison of Scotland who *became* insane while undergoing their sentences of imprisonment, and the proportion of these to the average daily population of the General Prison.

II. Of prisoners in the whole of the prisons throughout Scotland, and the proportion who *became* criminal lunatics out of the whole average daily prison population of Scotland.

III. Of the criminal lunatics actually *existing*, and their proportion to the number of the criminal population compared with the proportion of lunatics to the general population.

Without entering into minutiæ, we may refer to the conclusions drawn by the author.

Comparing the criminal with the common population of Scotland, and the proportion of lunatics to each, we have the following striking equation :—

Entire population of Scotland as in 1851,	Insane in 1860, Sane,	$\frac{8,084}{2,888,742} = \frac{1}{356}$
Entire prison population of Scotland, annually averaged,	Insane, Sane,	$\frac{85}{2,281} = \frac{1}{65}$

Dr. Thomson states that, with the exception of paupers, he knows of no statistics of any class of the community by which to make a comparison with the criminal class; but it is obvious that insanity leads to pauperism, and *vice versâ*, so that the proportion of lunatic paupers to the pauper class, or to the general population, could not afford any satisfactory basis of comparison.

The foregoing statistics bring out the following results :—

In the *General Prison of Scotland* the proportion of prisoners who became insane during the quinquennial period, 1856—1860, was	1 in 118
During the decennial period, 1851–1860	1 in 175
In all the population of the Scottish prisons	1 in 228
Proportion of *existing* criminal lunatics compared to the whole prison population	1 in 65
Proportion of lunatics in the general population of Scotland .	1 in 356

The conclusion from this analysis is, that criminals, as a class, are extremely liable to mental diseases, and show a high ratio of insanity compared to the civil population.

These facts are drawn from what has been actually ascertained regarding the amount of criminal lunacy; but there is no doubt that a large amount is unknown, in consequence of ignorance of the number of liberated prisoners who lapse into insanity, and whose history, after passing into asylums, is not traced to be of criminal origin.

So far as the 139 cases given go in regard to *age*, it would seem that the liability to criminal insanity was at its maximum from the age of 20 to 30; that it rose in the earlier periods of life, and declined with advancing years. Esquirol's experience led him to consider that insanity increased progressively after maturity. Dr. Thurnham's cases, amounting to 5122, showed the greatest liability from 20 to 30; the Hanwell statistics of 1766 cases indicated the critical period to be betwixt 30 and 40—Dr. Thurnham's statistics corresponding with those of our criminal lunatics.

In these 139 we note the following number of the two sexes:—

Males	95
Females	44

The males are more than twice the number of the females. This is very remarkable, and different from the liability of the sexes as declared by statisticians in regard to the general population. Of Bethlehem Hospital we have a table of the annual admissions of lunatics extending over thirty-eight years, which gives as under:—

Males	3511
Females	5407

Indicating upon a large scale the greater number of lunatic females. In 1858, the Lunacy Commissioners for England stated the proportion of insane of the two sexes to be:—

Males	8247
Females	9165

And in the Third Report of the General Board of Commissioners in Lunacy for Scotland, we learn that the results of 1858 and 1859 tend to show that females are more liable to lunacy than males.

The author offers no explanation of this singular exception from other statistics of lunacy, that the males preponderate in numbers so much over the female criminal lunatics.

II.—*Mode of Fatal Termination of Fifty-Two Cases of Typhoid Fever.* Communicated by DR. BRISTOWE to the Pathological Society of London. (Edin. Med. Journal, August, 1861, p. 156.)

In the 52 cases cited by Dr. Bristowe, the modes of death were as follows: In 8 instances the patients died before ulceration had been thoroughly established in the diseased Peyerian patches, and evidently from the uncomplicated effects of the typhoid poison. In 9 cases death occurred late in the disease, and when many of the ulcers had become more or less perfectly cicatrized, from perforation, from relapse, or from pneumonia, pleurisy, abscess, or debility dependent upon other causes. In the remaining 35 examples, the fatal termination took place at various periods between the above limits, either, as in the first class, from the direct influence of the disease itself, or from this associated, as in the second class, with diarrhœa, intestinal hemorrhage, bed-sores, pulmonary mischief, or perforation and peritonitis. In 15 of the total number of cases, death took place from peritonitis, the result of perforation of the intestines. In

9 cases perforation occurred during the process of separation of the sloughs; in 5 after the slough had become completely detached; and in 1 while cicatrization, excepting only the ulcer perforated, was progressing.

III.—*On Sexual Limitation in Hereditary Disease.* By WILLIAM SEDGWICK. (Brit. and For. Med.-Chir. Review, April, 1861, pp. 477–489, and July, 1861, pp. 198–214.)

In the words of Mr. Sedgwick, the hereditary transmission of disease is a subject for inquiry so vast and so little understood, that any fresh facts likely to throw light on only one of its subdivisions, cannot fail to be of some use, and to win perhaps for the whole subject a greater consideration than it has yet received. Hitherto but little notice has been taken of sexual limitation in hereditary disease, though it is of so constant and so regular an occurrence as not to be referable to mere coincidence. We may briefly cite a few of the illustrations which Mr. Sedgwick has gathered together, as elucidative of such transmission.

I. In *cutaneous affections*, allusion is made to examples of ichthyosis hereditary for three generations, the disease not being developed in the second generation, but reappearing in the third, the females alone transmitting the disease, but its appearance being restricted to the males; and of the disease being hereditary for four successive generations, and strictly limited to the male sex, two brothers having seven sisters who were free from it. The result of further researches, now being carried on, will probably add to our knowledge of the development and transmission of hereditary diseases of the skin.

Among the hereditary diseases of the skin, in which sexual limitation prevails, might be included the so-called *hemorrhagic diathesis*, which is said to be so common in the west of Germany, and in the Rhenish provinces, that in some families scarcely a single male arrives at maturity. The writer's main arguments for considering this peculiarity of the system, which is due, perhaps, to congenital malformation of the solids, rather than to any altered condition of the blood itself, as a hereditary affection of the skin, are: 1st. The hereditariness of the affection itself, extending to as many as five or more generations of the same family. 2d. The sexual limitation of the disease, the males being affected far more than the females, although the latter have a greater tendency to hemorrhage than the other sex, may be referred to as an instance of sexual preference in disease; but in some of the cases it is recorded, that while the males alone have suffered from the disease, the females alone have been able to transmit the disease, passing from the grandfather, through the daughter, to the grandson. 3d. The association, in some cases, of the hemorrhagic diathesis with hereditary rheumatism, a disease essentially characterized, if not initiated, by perverted action of the skin; an illustration being afforded by the prevalence of the united diseases for five generations, affecting exclusively the males, while the females, although they have never presented the same tendency to either disease, have, without exception, transmitted both to their male children. 4th. In some of the cases recorded, there has been a distinctly hemorrhagic eruption on the skin.

II. In *affections of the organs of the senses*, those of sight and hearing are alone discussed by the writer.

1. In *cases affecting sight*, we find instances of albinoes in a family, three males in one set of six children, the first and fifth being girls, without any such appearance, the second and sixth boys and albinoes; the third and fourth, twin boys, one an albino: of hereditary albinoism attacking a family in various generations, in one, especially, of which, there were four albino daughters out of a family of three sons and nine daughters.

In another instance, for three generations, the eyes have resembled in miniature the markings on the back of a tortoise-shell cat, restricted exclusively to the female sex. The same peculiarity occurred in every member of a family of fifteen brothers and five sisters, the inheritance being derived from the mother.

Instances of hereditary differences in the color of the two irides, and in the presence of coloboma iridis or cleft iris are also given; in the latter case the defect being transmitted from the mother's father without its being shared in by the mother, and her three daughters being free from it, though two of the three sons had it, the inheritance extending over four generations at least. Congenital absence of the iris, congenital opacity of the cornea, cataract, amaurosis, microphthalmia, congenital absence of the eyes, defect of muscular apparatus in the eye,—in one case of squinting the defect being limited to five boys in a family of ten, in which there were five girls—have also been hereditary and sexually restricted. In functional defects of the organ of vision, hemeralopia, nyctalopia, myopia, etc., have been limited in the same way; in one case of hemeralopia, the defect prevailing for two centuries, eighty-five members, belonging to six successive generations of the same family, having been hemeralopic, the defect being transmitted more by the women than by the men: in one instance of short-sightedness the affection was transmitted from the grandfather to the father, and from the father to the two sons.

Color-blindness is an illustration not so much of sexual limitation as of sexual preference. In one case mentioned, for instance, in five families in different generations, the total number being sixty-one, of whom thirty-two were males and twenty-nine females; of the former nine-sixteenths were affected, and of the latter only one-fifteenth. This defect of color-blindness seems to be almost exclusively limited to the male sex, for an analysis of two hundred cases and upwards shows that the proportion of males affected is nine-tenths of the whole. Yet where it has primarily affected the female sex, its sexual limitation is complete, as in an instance in which the defect occurred in thirteen individuals belonging to five generations of one family, all of whom were females; and several illustrations of a similar kind are mentioned by Mr. Sedgwick.

2. In hereditary diseases of the *organ of hearing*—which are, indeed, occasionally associated with defects of that of vision—striking cases are also recorded, the defect of color-blindness being sometimes associated, for example, with a corresponding inability to distinguish musical sounds; but the latter form of defect is not apparently peculiar to either sex. Deaf-dumbness sometimes appears to have a sexual limitation, as in the following illustrations: a carpenter at Paddington is the father of six children, three boys and three girls; the three boys have no imperfection of speech or hearing, the three girls are deaf

and dumb. In a family of thirteen in the County of Sligo, five were males, none of whom presented any defect; eight were females, of whom seven were born deaf and dumb. The writer then proceeds to show by statistics, that deaf-dumbness is not hereditary in the common acceptation of the term, but only in that wider sense in which we apply it, in consequence of several members of the same family, their cousins, or other collateral branches, being similarly affected.

III. In *phthisis*, the same sexual limitation has been observed; of 669 male and 341 female patients, suffering from that disease, admitted into the "Hospital for Consumption and Diseases of the Chest," 18·2 per cent. of the former and 36·2 per cent. of the latter were hereditary, and while the father transmitted the disease to his sons in 59·4 per cent., and to his daughters in only 43·5 per cent., the mother transmitted it to her sons in 40·6 per cent., but to her daughters in 56·5 per cent.

In elucidation of similar points of sexual limitation in hereditary disease, cases are recorded of hereditary *imbecility*, limited to the female line; of hereditary *twins* from daughters in a family in which the wives of sons have had but single children; hereditary *malformation of the hands*, limited to one sex, etc. Sexual limitation in the transmission of disease is considered by Mr. Sedgwick to be more common in females than males. In conclusion, we may state that what the author of this paper seems to contend for is, that when the limitation referred to does occur, the tendency of the restriction to become hereditarily attached to one sex is sufficiently decided to merit special notice, and that, although the disease may show itself in the opposite sex in succeeding generations, yet there is always a marked preference for that in which it first occurred, and that the preference so established is continued by inheritance to this favored sex.

The whole subject is full of interest, and suggestive of materials for observation and reflection.

IV.—*A Case of Malignant Disease of the Sigmoid Flexure of the Colon.* By T. OSBORNE WALKER, Esq., Jr., M.R.C.S. (Lancet, Aug. 31, 1861, p. 205.)

A case of some interest and rarity is described by Mr. Walker, as commencing with symptoms of enteritis, followed by vomiting, and, on the fourth day from the onset of the inflammatory symptoms, by a copious alvine evacuation, semi-fluid, and of a dark-green color. Signs of enteritis again occurred, but were relieved, until, after a day or two, there was a recurrence of pain, restlessness, tympanites, hiccough, and occasional vomiting; but in two or three days afterwards his medical attendant, being hastily summoned, found him in a state of collapse, exactly twelve hours after the supervention of which he died.

Post-mortem examination revealed a thickened and injected state of the peritoneun generally, with effusion of fæces, and a bruise-like discoloration of the sigmoid flexure of the colon, with several small, darker-colored points of ecchymoses, about the size of, and very much like, leech-bites, in the lowest of which was a small opening of a circular form, and just large enough to allow a hemp-seed to pass through it, through which, on applying pressure, fæcal matter escaped. This opening was situated in the anterior wall of the upper segment of the flexure; and about an inch below this was found a malignant mass, occupying the entire cylinder of the gut for about an inch and a half on the posterior and external wall of the intestine, and binding it down to the iliac fossa so tightly as to occasion great difficulty in its removal. It presented the appearance of cerebriform matter.

The most noteworthy circumstances presented by the foregoing case, and most available for diagnostic purposes, were the small quantity of fluid the bowels was capable of containing without pain and urgent desire to evacuate—not exceeding a pint and a half; the persistence throughout of dullness on percussion over the left iliac region—the site of the disease; the occasional distinct course of the distended colon, appreciable both to inspection and palpation, as far as the diseased portion; the peculiar brownish color of the patient's skin, being quite toadlike; the very small size of the stool once observed; the fluid vomited containing neither bilious nor fæcal matter; neither tumor, stricture, nor ulcer discoverable on examination per rectum, though at the anus was found a hemorrhoidal tumor, of the size of a Spanish nut.

At the onset of the attack, the quantity of urine, which was then voided with difficulty and pain, was small, and of a brandy color, without sediment; but in the course of the case it increased in quantity, and was passed with greater ease, still retaining its deep color. It was ascertained, by inquiry into the history of the case, that the patient had, on some occasions, observed his stools to be slimy and streaked with blood, and had suffered at times much abdominal pain and flatulence, with a bad appetite. The collapse marked the perforation, which was followed by fatal peritonitis.

V.—*On the Symptoms of Organic Disease of the Base of the Brain.* By C. E. BROWN-SÉQUARD, M.D., F.R.S. (Lancet, Aug. 31, 1861, p. 199.)

In a lecture forming part of a series on the diagnosis and treatment of the various forms of paralytic, convulsive, and mental affections, considered as effects of morbid alterations of the blood, or of the brain, or other organs, Dr. Brown-Séquard arrives at the following conclusions: From the examination of symptoms caused by organic affections of various parts of the base of the brain, it results that it is chiefly by the symptoms due to the loss of function of the cranial nerves that we may diagnose the precise seat of the alteration. It is most important, therefore, to find out which of these nerves is paralyzed in cases of hemiplegia supposed to depend upon a disease of the brain.

Paralysis of nerves of blood-vessels (the vaso-motor nerves) in organic disease of the base of the brain manifests itself chiefly by a dilatation of the blood-vessels, and an increased temperature, owing to an excess in the quantity of blood. Much remains to be learned on this subject; but certain rules may be laid down. For instance, an elevation of temperature is very frequently observed in the paralyzed limbs in cases of disease at the base of the brain in other parts than the pons Varolii or the medulla oblongata; while, when a hemiplegia depends upon a disease in a lateral half of either of these two organs, (above the decussation of the anterior pyramids,) the increased heat is in the limbs that are not paralyzed.

The following table will show, at the same time, what relates to the paralysis of blood-vessels, and to the paralysis of sensibility and of voluntary movements in cases of diseases of the brain and the spinal cord, limited to a part of a lateral half of these nervous centres:—

Table of symptoms of loss of function, according to the seat of a lesion in a part of a lateral half of the cerebro-spinal axis.

1. Lesion in the optic thalamus, the corpus striatum, or one of the cerebral lobes:—

	On the opposite side.	On the same side.
Sensibility	Lost.	Normal.
Voluntary movements	Ditto.	Ditto.
Temperature	Increased.	Ditto.

2. Lesion in the pons Varolii, or the medulla oblongata, above the decussation of the anterior pyramids:—

	On the opposite side.	On the same side.
Sensibility	Diminished or lost.	Increased.
Voluntary movements	Ditto.	Normal.
Temperature	Diminished.	Increased.

3. Lesion in the medulla oblongata at the level of the decussation of the anterior pyramids:—

	On the opposite side.	On the same side.
Sensibility	Diminished or lost.	Increased.
Voluntary movements	Ditto.	Diminished or lost.
Temperature	Diminished.	Increased.

4. Lesion in the spinal cord:—

	On the opposite side.	On the same side.
Sensibility	Diminished or lost.	Notably increased.
Voluntary movements	Nearly normal.	Diminished or lost.
Temperature	Diminished.	Increased.

This table shows—

1st. That *sensibility* is diminished or lost on the side opposite to that of the lesion, wherever it exists.

2d. That *voluntary movements* are diminished or lost either in the opposite side, or in the side of the lesion, or in both, according to the seat of the lesion.

3d. That *temperature* is increased (owing to the paralysis of blood-vessels) in the side of the lesion when it is in the spinal cord, the medulla oblongata, or the pons Varolii; and in the opposite side when the lesion is in other parts of the cerebro-spinal axis.

It is important to remember that paralyzed blood-vessels may contract under the influence of cold, so that the temperature of a part where blood-vessels are paralyzed may, at times, be very low, especially during the first few months after the beginning of the paralysis.

The symptoms of disease of the base of the brain depending upon irritation, although much more important than the symptoms of loss of function, as they teach much more regarding the nature of the lesion, have been very much less investigated. They may be divided into four distinct series: Symptoms of irritation of motor nervous elements, (nerve-fibres and nerve-cells;) of irritation of sensitive nervous elements; of irritation of vaso-motor or nutritive nervous elements; and of irritation of incito-motor and other special nervous elements.

As a conclusion of the lecture, the author states that it is by the combined examination of the two kinds of symptoms (those depending upon a loss of function, and those due to an irritation) that the seat of an organic affection in a limited part of the base of the brain will be found out. Though there is no great value for treatment in establishing this diagnosis of an organic affection of the brain, there is, at least, an incontestable importance as regards the prognosis in an accurate diagnosis of that kind.

VI.—*Mortuary Statistics of England.*

1. *Causes of Death in England.* (Lancet, Aug. 17, 1861.)
2. *Deaths in London in* 1660 *and* 1860. (Med. Times and Gaz., Aug. 17, 1861.)

To the Registrar-General's report is appended, as usual, an instructive paper by Dr. W. Farr, on the causes of death in England. The year now reported on (1859) is the first in which diphtheria has obtained a distinct line in the tables; it had previously been confounded with cynanche, and when the two are put together the rapid progress of this great epidemic becomes evident: the deaths in 1855 were 385; in 1856, 603; in 1857, 1583; in 1858, 6606; in 1859, 10,184. Epidemics of diphtheria are clearly described in the seventeenth century by Italian and Spanish writers, and its frequent association with scarlatina justifies the inference that the diphtherine—*ita materies morbi*—is some modification of scarlatinine.

Of the whole deaths of the year, one-fourth were referred to zymotic diseases. Small-pox destroyed 3848 persons, chiefly children, who had not been vaccinated; an instance, as Dr. Farr remarks, of the rigor with which the infringement of sanitary laws is visited, for the children perish, and the parents lose their offspring, by the neglect of a precaution of the simplest kind. A fatal outbreak of erysipelas at the Winchester Infirmary was traced to a cess-pool. Of the parasitic diseases it is remarked that the ova of worms must be derived generally from impure river waters, into which the refuse of towns is poured.

We have but an imperfect conception of the number of deaths from excessive drinking; but 345 were directly ascribed to intemperance, and 545 to delirium tremens—890 in all from the two forms of alcoholism. Passing next to constitutional diseases—another regiment of the enemies that dog our steps—we find gout described as nearly stationary; it is considered that, thanks to the more intelligent system of dining which the wealthier classes, wearied of this racking disease, will probably introduce, we may hope to see gout rapidly decline. The deaths from tuberculous disease have decreased since 1853; those from bronchitis have increased very greatly of late years.

Among local diseases we find affections of the three vital organs—the brain, the heart, and the lungs—causing nearly a third of all the deaths of the year. Fright was the cause of 7 deaths, (not all children,) grief of 8, (7 women,) rage of 5, (4 infants,) anxiety of 1, (a man,) mental shock of 1, (a woman,) melancholy of the deaths of 21 men and 26 women. Above 25,000, chiefly infants, died of convulsions—a striking and distressing symptom—but probably only part of the disease, which is the result of organic lesions and local irritations that are never discovered.

To the decay of old age, without any disease, 27,104 deaths are referred; "the weary wheel of life at length stood still." 14,649 persons were killed—a sad confession, says Dr. Farr, for a nation humane, civilized, and skilled in all the arts, to have to make. Annually 75 persons in 100,000 thus die a violent death. 13,056 of these deaths, in 1859, are ascribed to accident or negligence; among them were 279 by poison. 1248 deaths were declared by coroners' juries to be suicides; 338 murder or manslaughter. 18 persons were killed by lightning, nearly all persons of out-door occupation; the house is safer than the field.

The Registrar-General's report for 1859 contrasts the statistics of disease, so far as we are possessed of them, of two centuries back with those of the present day. It takes 100,000 people of the London of 1660–79, and compares them with the same number of 1859. The same number presented at the two different periods respectively 357 and 42 annual deaths by small-pox; 759 and 227 by fever, ague, scarlatina, quinsy, and croup; 1079 and 611 by consumption and diseases of the breathing organs; 763 and 8 by dysentery; 142 and 2 by scurvy; 298 and 26 by dropsy; 1175 and 136 children's deaths from convulsions and teething, and 86 and 17 women's deaths in child-bearing. All this decrease in the modern figures is over and above the decrease which we gain when we count the deaths of the Great Plague. In one article, however—that of diseases of the brain, apoplexy, paralysis, epilepsy—the older figures have the advantage of the latter, being 57 then to 151 now.

It is deserving of notice, that the only form of disease which has gained ground is that connected with the head, which exceeds now, by nearly 3 to 1, the amount of the same form of disease at the former date, as the figures above show. This is, perhaps, the result of the very civilization and mental growth to which we are indebted for the improvements in every other sanitary quarter.

VII.—*The Small-pox in Prussia in* 1859. (Med. Times and Gaz., Sept. 7, 1861, from the Berlin Med. Zeitung, 1861, No. IX.)

From the report just published on the authority of the Prussian government, we extract the following figures. A great decrease of small-pox occurred in 1859 as compared with 1858; in the latter year there were 30,843 cases, with 2789 deaths; in the former but 16,035 cases, with 1371 deaths. Of the 16,035 cases in 1859, there were 4627 among children, (*i.e.* under 15 years of age,) and 11,408 among adults; and of the 1371 deaths, 569 occurred among children, and 802 among adults—the mortality in the whole number being 8 per cent., among children 12 per cent., and among adults 7 per cent. Of the 16,035 cases, 13,364 had been vaccinated, and 2671 had not been. Of the vaccinated 6 per cent. died; 7 per cent. among the children, and 5 per cent. among the adults. Of the non-vaccinated, 20 per cent. died; 23 per cent. among the children, and 17 per cent. among the adults. Among the cases, 591 had been re-vaccinated, and of these 42 died.

VIII.—*On the Effects of Lightning upon the Human Body.* By DR. W. STRICKER, of Frankfurt. (Virchow's Archiv, Band xx., Hefte 1 and 2, p. 45, quoted in Brit. and For. Medico-Chirurg. Review, July, 1861, p. 262.)

The author of this paper furnishes a detailed description of the mode in which the lightning passes along the body of a person struck, its general results, etc.

He supposes the person injured to have been sheltering under a tree, or to have been exposed openly. In the first case, the lightning in passing from the tree strikes the body on the neck or shoulder, causing a burn and much pain, with extravasation and congestion of the vessels over a broad part of the surface. From this a smaller stripe passes, running down to the nates, gradually getting less, and more superficial, but at the buttocks, where in the man the clothes fit tighter, the conduction is more intense. The lightning is conducted either—(1) by the skin, thence toward the trochanter on one or both sides, the marks becoming weaker, and so on to the knee, where, owing to the tightness of the dress, it causes a deeper burning, runs along the calf, and then, if boots are worn, passes over and destroys them, or passes along the skin to the heel, and wounds it, and after piercing the shoe, makes a hole in the earth; often the lightning passes along the ankle: or (2) it may be conducted along the trousers, which it destroys, or pierces only with a round hole.

When the lightning strikes a person freely exposed on the ground, then the head-covering is destroyed and the vertex smitten. From thence the conduction may be twofold, either (1) from the cranial bones to the brain, producing death by the simple or combined influence of the injury to the brain-mass, or by rupture of the blood-vessels; or (2) along the skin. In the latter case, the skin of the face and neck is almost always completely spared, and the lightning effects a considerable burn over the sternum; in some cases it enters the mouth, affects the teeth and tongue, causes bronchitis, loss of voice, etc. Proceeding downward, the track passes toward the inguinal region, only the shirt being sometimes torn, and then an interruption of conduction often occurs, occasioning deep burning of the groins, genitals, etc.; and occasionally we have mortal laceration of the intestines, or in milder cases injection of the liver, spleen, stomach, etc. The conduction, then, is through the skin or clothing, or both, to the back of the foot, where a wound is produced. The burning of the hair is very remarkable, and this may happen without any injury to the skin.

The burning produced by the lightning varies from that of the cautery to a mere drying of the tegumental surface.

The general results of injury by lightning are:—

I. In those killed, the rapid supervention of putrefaction and the dilatation of the pupils. The hemorrhage from the nose and mouth is not sufficiently understood.

II. In those only outwardly injured, (partly, perhaps, from fright.)

1. Excessive stupefaction.

2. Great alternate depression and exaltation, long-drawn inspiration, small, slow pulse, cooling of the skin, muscular debility.

3. Suppression of urine, and constipation; vomiting, loss of appetite, sometimes purging.

4. Great painfulness of the part affected, which increases for two days, and then declines.

5. On the uterus of pregnant women no peculiar effect is produced; like any other fright, it tends to arrest existing menstruation.

6. Cataract and nyctalopia may possibly be a result.

IX.—*Hypertrophy of the Heart, with Ossification of the Aortic Valves.* Post-mortem examination of the body of the late Lord Chancellor Campbell. Communicated by WILLIAM ACTON, Esq. (Quoted in the Dublin Medical Press, Sept. 4th, 1861, from the London Lancet.)

On the 24th of June, Mr. Acton was requested to make the necroscopic examination of the late Lord Campbell. It appears that the subject of this notice, after retiring to bed in his usual health at half-past twelve o'clock at night, was found dead at eight o'clock the next morning; and the *post-mortem* was made thirty-four hours after the dead body was discovered. The heart and aorta were found seriously affected, and we may therefore exclude from special consideration other appearances which were not of such material importance.

Heart.—Large, weighing twenty-five ounces, (the usual weight being eight or nine ounces,) firm, with a deposit of fat on the surface of the right ventricle. Thickness of the walls of the left ventricle about three-quarters of an inch. The structure of the organ was unusually firm, considering the age of the deceased peer, (eighty-one years.) Some deposit of fat beneath the endocardium. The cavities contained small quantities of dark, fluid blood; no clots whatever.

Aorta.—Lining membrane stained. Aortic valves, although not much thickened at their edges, were incrusted on their aortic aspect with calcified deposits of intense hardness. The deposit could not be cut, but might be broken. A similar incrustation was noticed on the outer surface of the middle aortic valve. The arch of the aorta was very much stained, and presented numerous but small patches of atheromatous deposits. Similar appearances were noticed at the roots of the vessels arising from the aorta. No evident atheroma of the coronary arteries, which were carefully traced.

The only structure which could be said to have become degenerated, after sixty-five years of hard and almost uninterrupted labor in law, letters, and politics, was that of the aortic valves. These, as the *post-mortem* examination demonstrated, were thoroughly changed in structure, and that this was the immediate cause of his death will be presently shown.

Although the heart was nearly three times the normal weight, its structure for a man of eighty was unusually sound, and, what was equally remarkable, the coronary arteries which supplied the heart itself with blood, and which one might have fully expected to find diseased, had evidently been quite recently fulfilling their due functions. It was owing, then, probably, to the possession of a heart so organized, a remarkably large, firm, healthy brain, capacious lungs, and an uninjured liver, that the functions of the late lord's life were so long and uninterruptedly carried on, in spite of a pathological condition of the aortic valves, which would in ordinary cases have long since been fatal, and which eventually determined this one.

It appears, from the statements of the family, that the late lord had enjoyed through his long life excellent health. He rarely, if ever, had occasion to consult medical men; and neither he nor his family had any idea of his ever having suffered from any disease of the heart, rheumatism, or fainting fits. He had been in the daily habit of walking from the House of Lords to his home. He could mount stairs without palpitation. He was strictly abstemious, and on the evening preceding his death had not taken any indigestible food. The *post-mortem* examination enables us with certainty to infer the way in which death took place. After retiring to his bedroom, his lordship undressed and went to bed. After some time, (it is impossible to conjecture how long,) probably finding himself faint, he rose, threw off his body linen to obtain relief, and was about to sit down in the easy chair, when a fainting fit seized him. He became unconscious, having previously coughed up the matter found on his shirt, and he remained in that position until found by his valet at eight A.M.

The *physical cause* of death was probably as follows: Having labored for some years under ossification of its aortic valves, the heart (as is not unusually the case, even without any assignable cause) becomes sooner or later fatally embarrassed in its action. This embarrassment of circulation, it may be inferred, came on without warning, after the deceased had lain down on the morning of the 23d of June, and, producing a feeling of faintness, prompted him to rise from his bed. This effort was of no avail; for the lungs, also engorged, were unable to relieve themselves, and through their failure, the brain, becoming speedily charged with unoxygenated blood, ceased at once to perform its functions. We must presume that the subarachnoid effusion, as well as that into the cavity of the pleura, took place nearly one or two hours before death.

X.—*The Diseases of Hong Kong and the Canton River Station.* By DR. SMART. (Lancet, Aug. 3, 1861, p. 114.)

From the analysis, contained in the *Lancet*, of a paper on the relation of Chinese climate to the diseases prevalent, derived from the statistics of the Royal Naval Hospital at Hong Kong, during thirteen years, we make the following condensed extracts:—

Climatic diseases.—621 cases are quoted under the head of fevers, 83·25 per cent. of which were cured; 10·46 per cent. invalided; and 5·95 per cent. died. Of 1471 cases of intestinal disease, 58·12 per cent. were cured; 24·67 per cent. invalided; and 16·65 per cent. died. Of liver diseases, 57 per cent. recovered; 24·3 per cent. were invalided; and 18·69 per cent. died. Spring is the healthy season; June, July, and August, and October to January, being unhealthy months, those being the periods when the plains are undergoing artificial drainage for the rice harvest, or when the whole surface is being dried by spontaneous evaporation. Deaths from fevers are fewer in the worst season, the type of fever and other causes producing such a paradoxical result.

Small-pox.—Inoculation is practiced in the spring, so that the disease is epidemic at that time. In the propagation of cow-pox from imported virus, Dr. Smart found it of uncertain operation.

Diseases of the abdominal viscera were most intense in the months of falling temperature, with a drying soil, from October to January, inclusive; and again in the hot, moist months, from June to August. In the thirteen years of Dr. Smart's investigations, there was but one cholera season. When peritonitis prevailed, pleuritis was also frequent.

A peculiar form of bowel-complaint occurs in China, known as "diarrhœa acholica," on account of the yeasty or pipe-clay stools; as diarrhœa with marasmus, or as diarrhœa with debility, and occasionally as "diarrhœal dysentery;" and, in India, as "diarrhœa alba," and "hill dysentery." It differs from tropical dysentery in not being a disease of deposit, but simply one of nutrition, from non-absorption of aliments, depending upon functional derangement of the chief absorbents, the spleen, and the liver.

Liver diseases.—The ratios of mortality and invaliding in liver diseases are found to be almost equal to those of dysentery, the mortality being 20·4 and 20·8 per cent., and the invaliding 26·5 and 25·47 per cent., in the two diseases respectively.

Fevers.—When the zymotic causes predominate, as in the summer and autumnal fevers of 1858 and 1859, among the troops in garrison at Canton, the typhomania and rose-colored eruption which characterize "typhoid," are truly pathognomonic of the lesions met with in the autopsies. The history of such cases removes all doubt of the existence of the zymotic causes of typhoid in the southern cities of China, as in the crowded parts of the cities of Europe.

Entozoa are of frequent occurrence; *diseases of the nervous system* were more frequent, and their mortality highest in the Christmas quarter; *hydrophobia*, as a consequence of "rabies canina," is known throughout China; *leprosy* exists in the same form as that which is seen in the Levant, while those affected are considered outcasts, and obtain their livelihood by begging.

Affections of the respiratory organs are not frequent enough to be of primary climatic importance, but the fatality, etc. indicates more than the average severity of type. In regard to the results of the pulmonary complications of the climatic fevers, Dr. Smart thinks pneumonia, as a complication of fever, was less fatal, and pleurisy more fatal, than when of idiopathic origin.

Syphilis.—The syphilitic cachexy is most difficult of eradication from the system in China, and has a marked influence on the effects of treatment in the climatic diseases, more especially in dysentery. Nearly 16 per cent. of the nosological table were syphilitic cases. Periosteal disease, as a consequence of syphilis, forms a large group in the class of cases arranged under the head of rheumatism, though some of the invalidings from the latter also include implications of the heart in arthritic cases.

Diseases of the integuments and glands contributed 17 per cent. of the total cases of disease. Phlegmon is a most distressing complaint to almost all new-comers in the spring and summer. An attack of boils is borne patiently, under the conviction of the sufferer that it wards off climatic diseases. Boils are often preceded by "lichen tropicus," another imputed salutary effort of milder form. Abscesses are often of a grave character, a mortality of 7 per cent. being an indication of their severity; and Dr. Smart is disposed to consider acute suppuration of the areolar tissue as the ordinary cause, often setting in on the subsidence of fever.

XI.—*The Hot Bath: its Physiology, Use, and Abuse; especially in connection with the Treatment of Drowning.* By CHARLES HUNTER, Esq., M.R.C.S., etc. (Lancet, Aug. 10, 1861.)

In a previous number of this Journal we referred to the use of the hot bath in cases of asphyxia from drowning. After remarking that if in drowning, the failure of cardiac action was the main evil and the cause of the other symptoms, then the employment of the hot bath might be advantageous, but that if the failure of the heart's action was a secondary, or brought-about phenomenon, then the warm or hot bath—a question only of degree—would be certainly prejudicial, Mr. Hunter proceeds to inquire whether, in drowning, vitality ceases from the lungs first, or from the heart. It can be shown and verified, he says, that—

1st. In drowning, the lungs are the organs first and mainly affected.

2d. That the heart is influenced only in a secondary and consequent manner. And that, therefore, with regard to the mode of death—

3d. The lungs cease to act before the heart does; and

4th. Death is from the lungs by apnœa, or its secondary effects on the system. From which established fact it stands to reason—

5th. That the first and chief part of the treatment should be directed to the lungs and the improvement of the pulmonic circulation; and

6th. That the heart and systemic circulation should only receive secondary attention.

After quoting the views of authorities, Goodwyn, Fothergill, Taylor and others, the writer draws this inference: That the longer cardiac pulsations continue, after the lungs have ceased to act and purify the blood, the more effectually is the system being narcotized by the non-eliminated carbonic acid in the blood. And with this important truth, as he calls it, firmly fixed in his mind, he condemns the use of the hot bath for the purposes of stimulation in cases of drowning as pernicious and reprehensible.

Submersion or drowning, as to its effects, may be thus given:—

Main effects of submersion.

Occasioning primary apnœa:

1. Deprivation and induced expiration of air; cessation of lung action.
2. Embarrassed cardiac action; embarrassed blood circulation.

Secondary effects.

Occasioning secondary apnœa:

3. Absence of blood purification.
4. Induced absence of nervo-muscular power; of consciousness, reflex action, etc.
5. Gradual loss of animal heat.
6. Entire cessation of cardiac action.

XII.—*On the Pathology of Asthma.* By G. H. Kidd, M.D., Assistant Physician to the Coombe Lying-in Hospital, Dublin. (Dublin Quarterly Journal of Medical Science, May, 1861, p. 292; quoted in British and Foreign Medico-Chirurgical Review, July, 1861, p. 263.)

The physiological and pathological conclusions arrived at by Dr. Kidd are as follows:—

1. During the paroxysm of asthma, the chest is distended to the greatest possible extent. 2. The muscles of inspiration are in spasmodic action, (tonic spasms.) 3. The bronchial muscles are muscles of inspiration, and associated in

the spasmodic action with the other muscles of inspiration. 4. Breathing is carried on by the voluntary effort to aid the muscles of expiration, and as soon as this is relaxed, the muscles of inspiration, like so many stretched bands of india-rubber, distend the chest again.

That the spasm of the bronchial muscles in asthma arises from some morbid action in the medulla oblongata, is to be inferred from the following facts:—

1st. The fact that the spasm affects an entire group of muscles. Now, Schroeder Van der Kolk has shown that muscles associated in action are supplied by nerves arising from special groups of mutually associated and connected ganglion corpuscles. Disorder of this group would then manifest itself in the entire class of muscles.

2d. Van der Kolk has also shown that the skin covering parts moved by muscles is supplied with sensitive nerves, arising from the same segments of the spinal centre as the motor nerves of those muscles arise from. Dr. Salter has remarked, as an almost universal symptom of asthma, that there is itching of the skin under the chin, over the sternum, and between the scapulæ. This, it is evident, is a subjective sensation, and indicates an irritation existing at the roots of the nerves.

3d. Paroxysms of asthma are observed to occur in cases of acute hydrocephalus, as in a case mentioned by Dr. Salter, and in one mentioned by Dr. Graves, where there were also general convulsions. In persons liable to epilepsy recurring at regular intervals, fits of asthma occasionally take the place of, or serve as a substitute for, the epileptic fits.

4th. The state of the patient producing the fit of asthma indicates an affection of the nervous centres. In one there is mental exhilaration, in another mental depression. A patient of Sir J. Forbes is awakened by convulsions in one foot and leg, and as soon as the asthmatic fit is developed, the convulsions of the extremity cease.

5th. The exciting cause indicates the same. In one, cold water applied to the instep will cause an attack; in another, sudden emotion, going to bed with a loaded rectum, etc. etc. Emotion will also check the paroxysm when fully developed. Hence it may be inferred that asthma depends on a morbid state of the medulla oblongata and spinal centres, which manifests itself by throwing the entire group of inspiratory muscles into spasmodic action.

OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

BY WM. B. ATKINSON, M.D.,

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I.—*The Timely Use of the Obstetric Forceps.* By EDWARD B. SINCLAIR, M.D., Dublin.

The chief object of the obstetric practitioner should be the preservation of the structures of both mother and child, and the prevention of fever and inflammation during and after parturition.

The early application of the forceps prevents inflammation of the mother's tissues, and its results. The free and timely use of this instrument is a powerful means of warding off disease and death, especially in public obstetric institutions.

Out of 13,748 deliveries at the Dublin Lying-in Hospital, (225 by the forceps,) there occurred 20 cases of sloughing of the soft parts; 7 of these were in deformed pelvis, after perforation and crotchet delivery; 5 in tedious labors, not instrumental; 2 in prolapse of the funis, and 1 in retained placenta; in neither of which the forceps was used, leaving but 5 cases of sloughing after the use of the forceps. There were only four examples of fistula after convalescence: 2 completely closed; 1 contracted to a minute opening; and in 1, the woman subsequently died of peritonitis. Had the forceps been used more freely and earlier, Dr. Sinclair is almost certain that the 5 cases which occurred in tedious labors, without instruments, and the 5 with the forceps, would not have been recorded.

In public institutions there is a strong disposition to puerperal diseases. Lessen the tedious cases and this will not occur. Thus, in 242 deliveries in one period, the forceps never used, there were 17 deaths, not to mention cases of disease. In 3886 deliveries in another period, there were 70 deaths, and the forceps was used 38 times. In 9620 deliveries in a third period, there were 78 deaths from all causes, and the forceps was used 187 times.

In the above-mentioned institution the rules finally adopted were, never to wait for positively bad symptoms. In doubtful cases, and where the application was not difficult, the forceps were employed; or if the fœtal heart seemed about to fail after ergot, or in slight narrowing of the pelvis, and also in every case where it is certainly seen that bad symptoms will arise, and that the woman will not previously deliver herself, the rule was to apply the forceps as soon as justifiable.—(*Dublin Jour. Med. Sci.*, August, 1861.)

II.—*Neuralgia after Parturition.* By HENRY NUTTALL, M.D., Leicester, England.

Of this complication of the puerperal state, but little mention is made by the authorities in obstetrics, though it would appear of sufficiently frequent occurrence. Dr. Nuttall has recently encountered two cases, one a tedious labor, and the other remarkably easy. In both, the pain was felt in one of the lower extremities, extending from the foot up to the hip. The treatment, consisting of opiates, steel, and quinine, was but partially successful, time acting greatly in the cure. —(*Brit. Med. Jour.*, July 27th, 1861.)

[We have recently met with three cases of neuralgia immediately succeeding parturition; in one the pain was confined to the breast, was constant and agonizing. In the others, it was more general, and changing constantly from one part to another. The treatment which relieved the pain, consisted of the administration of quinia, belladonna, and morphia, in full doses.—W. B. A.]

III—*Unusual Elongation of the Fœtal Head as a Cause of Difficulty in the Application of the Ordinary Obstetric Forceps.* By GRAILY HEWITT, M.D., London.

The author's attention has been directed to the subject by the fact that, in a particular case, a difficulty was experienced in applying the short forceps. After the labor had been completed, the head of the child, compressed and moulded to the shape of a narrow and unyielding parturient canal, was found to be unusually elongated in the occipito-mental diameter, measuring six inches half an hour after birth. The actual size of the head was not remarkable. The difficulty with the forceps was due to the fact that the side of the head presented, owing to its elongation, a curve different from that ordinarily met with, and the blade of the instrument was not long enough, while, at the same time, it was too sharply curved to meet the requirements of the case. The only modification of the forceps hitherto made, had reference to the position of the head in the passage. The shape of the head should also be regarded. The author exhibited an instrument, with a blade of eight inches, the curve that of a circle of fourteen inches, and identical in other respects with the ordinary short forceps. Thus modified, he believed it would answer every indication. In the long, tedious labors of primiparæ, this instrument would come into requisition.—(*Med. Times and Gaz.*, June 15th, 1861.)

[Dr. Chas. P. Bethel, of this city, has produced a modification of the Davis forceps, which would seem likely to meet all such difficulties. In it, the curve of Carus is closely imitated, at the same time the blade is admirably fitted to the child's head, and by the length of the blade, it would be fully equal to the requirements of these exceptional cases alluded to by Dr. Hewitt.—W. B. A.]

IV.—*Is Ergot, when administered to the Mother during Labor, dangerous to the Life of the Child?* By R. UVEDALE WEST, M.D., Edinburgh.

In a previous paper, the author reported 69 cases in which he had administered ergot, out of 278 labors; 9 children were still-born, viz., 2 putrid at birth; 2 after labors with hemorrhage; 1 footling, with hydrocephalus and consequent fatal compression of the funis; 1 in which there was evidence of latent compression of the funis; 1 a difficult primiparous forceps delivery; 1 a vectis delivery, the mother seriously ill from excessive œdema; and 1 dead without any assignable cause. Since then he has attended 734 labors: ergot was given 172 times, including one case of twins, thus giving 173 children. Only 5 were still-born, viz., 3 putrid at birth; 1 with placenta prævia and profuse hemorrhage—premature; and 1 with prolapsed funis.

From these statistics, Dr. West believes there is no sufficient evidence to justify the doctrine that ergot is dangerous to the life of the child.

As to the mother, in these 1013 labors there were 7 deaths in the lying-in month, of which 1 had taken the ergot; 18 cases of incarcerated placenta, of which 5 had ergot; 25 of *post-partum* hemorrhage, 5 after ergot; 30 of puerperal disease, 9 after ergot. Hence he concluded this agent had no influence either in causing or preventing parturient accidents or diseases. Probably it might, in deficient uterine action, control hemorrhage and after-pains.

He considered it immaterial, in the use of ergot, whether the os was rigid or supple; the liquor amnii discharged or not; the mother a primipara or not. It was useful to improve uterine action, and only dangerous where such action would be, as an arm presentation with the membranes ruptured, as then turning would by it be rendered more difficult.

Dr. Graily Hewitt thought the conclusions were fully borne out by the data, and the inactivity of ergot was proved.

Dr. Tyler Smith differed: Ramsbotham's statistics proved the reverse. Those of Hardy, McClintock, Johnstone, and Sinclair were so convincing that in the Dublin Lying-in Hospital it was a rule to use the forceps, unless the child was delivered within twenty minutes after giving ergot. Whether it acted as a poison or mechanically, he had no doubt of its deleterious effects. It should be regarded only as a *post-partum* remedy.

Dr. J. Braxton Hicks felt sure that occasionally the effect of the remedy was to cause continuous contraction in the circular direction rather than longitudinally, whereby the child was so tightly clasped that it perished from pressure on the funis.

Dr. Barnes regarded the toxical effects of ergot as established. He had observed direct injurious effects, as the rupture of the perineum by the violent driving of the child through the pelvis. After its administration, there was no means of controlling the action of the uterus.

Dr. Hall Davis had seen one case, if not more, where rupture of the uterus was traceable to its use. He only considered it to act mechanically.

Dr. Chowne agreed in this belief: the agent required caution in its use. It did harm by the continuous contraction induced.—(*Brit. Med. Jour.*, July 27, 1861.)

V.—1. *Placenta Prœvia.* By William Read, M.D., Boston.

From a volume entitled "Placenta Prævia; its History and Treatment," by Dr. Read, we obtain the following summary:—

The danger to the mother increases as the period at which the labor comes on approaches the full term. It is therefore better to terminate the labor after it has really begun, as soon as compatible with the safety of the patient, than to endeavor to conduct the pregnancy to the full term.

The danger to the mother is less when the os uteri is completely covered than when a portion only is involved in the attachment of the placenta; and least of all, where the attachment becomes nearly or quite central with reference to the os. Under these circumstances, there is a strong probability, if the contractions are vigorous enough, that the placenta will be thrown off and expelled into the vagina, and the hemorrhage be checked.

The *condition* of the mother is more important in making the prognosis than the amount of blood lost. When the pains are vigorous and permanent, the head presenting, the os in good condition, and the strength not materially impaired, *rupturing the membranes*, by letting off the waters, and bringing down the head on the os, will generally place the mother in safety. But if there is a want of tonic power, or forced delivery be probable, this method will increase the difficulty of the operation, and the danger to the mother.

The danger to the mother is increased by artificial delivery. But this is owing not to the operation itself, so much as to the exhaustion at the time, and with a favorable condition of the mother this is reversed. Hence this operation should be performed before exhaustion comes on, and should not be delayed an instant beyond the time when the state of the os will permit the introduction of the hand. When, from any cause, artificial delivery is forbidden, the placenta should be wholly separated and the strength of the mother recruited by every means, till she can be delivered.

The tampon may be used where, with some flooding, the os remains rigid. But never when artificial delivery is possible.

Ergot should not be administered when there is a probable necessity of terminating the labor by an operation, unless at such an interval that the effect of it is either exhausted or will not come on until after the operation is finished, or the condition of the mother is such that it will merely act as a stimulant.

Where the exhaustion is excessive, and version is the only alternative, after the feet have been brought down, the body of the child should be left undelivered until the uterus has been roused to contract and a firm condensation of its walls has been secured; or, at least, it should be withdrawn so slowly as to prevent the evil consequences which sometimes follow too sudden delivery.

2.—*Ibid* By CHARLES CLAY, M.D., Manchester.

Dr. Clay has, for nearly forty years, put in practice Mr. Kinder Wood's plan of detachment of the placenta by means of the forefinger.

The statistics of version and immediate delivery are—

Fatal to mother	1 in 3 cases.
Fatal to child	1 in 2 cases.

From the best authorities, those of detachment and then leaving the case for nature, are—

Fatal to mother	1 in 44 cases.
Fatal to child	1 in 5 cases.

In Dr. Clay's practice he has *never known it to fail.* The hemorrhage immediately ceases. He has never witnessed any bad consequences from this plan; there is less violence done, the danger is reduced, the results are far more favorable.—(*Glasgow Med. Jour.*, July, 1861.)

3.—*Ibid.* By ROBERT BARNES, M.D., London.

After reporting in detail 3 cases, Dr. Barnes sums up as follows :—

Detach with one finger, passed through the cervix, all that portion of the placenta adhering to the cervix. Tap the membranes and drain off the liquor amnii. If the uterus remains flaccid, and *hemorrhage continues*, accelerate the delivery by artificial aid, as, where the cervix is dilated, turn; where otherwise and rigid, employ the caoutchouc dilater.—(*Lancet*, June 1, 1861.)

4.—*Ibid.* By THOMAS RADFORD, M.D., Manchester.

Dr. Radford, being desirous of obtaining statistics on the subject of the treatment of placenta prævia, solicits communications from practitioners as to the following particulars:—

The number of cases of this accident; partial or complete; state of the os; general condition of the patient; degree of hemorrhage; presentation of the child; mode of practice. Was it (*a*) to leave it to the natural powers, (*b*) to merely rupture the membranes and then trust to nature, (*c*) to turn and deliver, (*d*) to completely detach the placenta and then leave the child to be expelled by the uterus, (*e*) to completely detach the placenta, extract it, and then deliver? (*f*) was the placenta separated or detached by the hand or by a finger? (*g*) what was the degree of hemorrhage which occurred after the complete detachment of the placenta? (*h*) what was the mother's fate? (*i*) what was the child's fate? (*k*) was galvanism applied? (*l*) at what period of pregnancy, and if first, or which other pregnancy?—(*Med. Times and Gaz.*, Aug. 17, 1861.)

[Being desirous to aid Dr. Radford in his inquiry upon this subject, I would be happy to receive communications from American physicians, and, where desired, prepare them as Dr. R. requests, and forward them to him.—W. B. A.]

VI.—*On the Indications and Operations for the Induction of Premature Labor, and for the Acceleration of Labor.* By ROBERT BARNES, M.D., London.

The author traces the history of the various modes of inducing labor, and discusses the action and merits of each. The only method used for a long time was the puncture of the amniotic sac directly over the os uteri. Experience showing that the premature escape of the liquor amnii led to the frequent peril of the child from undue compression in being forced through an imperfectly dilated cervix, Hamilton substituted the separation of the membranes for a given space from the lower segment of the uterus; and Hopkins tapped the sac at a point remote from the os. Others gave ergot. Merrem and Krause placed a flexible catheter in the uterus, leaving it there to excite pains. Braun then spoke highly of this plan. In 1820 Brunninghausen led the way in a series of proceedings for dilating the cervix by plugs, etc. In 1842 Huter proposed to expand the vagina by inflating bladders introduced in a flaccid state. Braun then introduced his caoutchouc colpeurynter. These contrivances have been followed by inflammation of the genitals, and death. Galvanism, irritation of the breasts, and the carbonic acid gas douche were also used. The latter caused sudden death in the hands of Scanzoni. In 1846 Kiwisch introduced the vaginal warm-water douche; soon after, Cohen revived a proposition of Schweighauser, in 1825, to inject water into the cavity of the uterus. This plan is now extensively used. Guillier relates a case of sudden death following it. The author then adverted to the recent application of the caoutchouc dilater inside the os and cervix uteri, and quoted successful cases. In two cases of placenta prævia, he had thus accelerated labor, successfully opening the cervix for delivery by turning. In three cases he had induced labor by this method; one, a case of distortion of the pelvis, one of distortion with cicatrized os, and one of almost complete obliteration of the cervix by cicatricial tissue. The caoutchouc dilater acts gradually and gently; it admits of being applied to the exact spot where a dilating and exciting force is required; as a means of overcoming rigidity, it is more certain and efficient than any other. As an accelerator of labor, it is so perfect as to supersede altogether the accouchement forcé, an operation which might now be exploded. *It enables the practitioner to deliver almost at will, not only on a fixed day, but at a predetermined hour*, a power that gives us control over cases of convulsions, obstinate vomiting, exhaustion from disease or hemorrhage, much needed and not hitherto possessed. The author concluded by classifying the measures into preparatory, labor provocative, labor accelerating. We should proceed in regular gradation, prepare the soft passages, invoke contractile energy, accelerate delivery. By the judicious consecutive use of these means, it is possible to terminate a labor with certainty in a given time, and that with a greater amount of ease and security to the mother and child than has hitherto been attained. This justified the hope that the operation might be applied to the relief of emergencies and dangers which had heretofore baffled the skill of the physician.

DR. I. BAKER BROWN thought the well-recorded cases of individual practitioners of greater intrinsic worth, and more reliable, than a mass of figures tabulated together to form statistical tables, often so arranged as to carry out the peculiar views of the compiler. He had for twenty-five years adopted the plan of puncturing the membranes to induce labor. Hot and cold water injections he found uncertain and tedious. The new plan was evidently an excellent one, and differed from that of Dr. Keller only in the use of water instead of air. *Incision of the os is to be highly commended*, as it is well known that in primiparous cases the os, when rigid and unyielding, is frequently lacerated by the violent expulsive uterine efforts, and yet no harm occurs to the woman from such laceration. So self-evident is this, that some gentlemen are in the habit of dividing the os with a bistoury, and, by accelerating labor, prevent the chance of laceration. The operation can be had recourse to with safety and advantage.

DR. PRIESTLY had found the injection of tepid water into the cervix the simplest and best, requiring only a syringe and gum catheter. The operation is almost painless, generally easily performed, and usually induces labor in less than twelve hours. One disadvantage of injecting water into the uterus, is the liability of causing a change in the position of the child, and thus producing a bad presentation. He had seen this twice.

DR. HALL DAVIS thought the great object should be to save the bag of liquor amnii, as being nature's arrangement for safely dilating the passages, and defending the child from pressure. His plan was to introduce the index finger gently through the os, and upward outside the membranes as far as he could reach; he then swept it around, dislodging the mucous plug, and separating the membranes to a corresponding extent. Subsequently, a piece of oiled soft sponge was introduced, as large as could be passed without much difficulty. Where the os would not admit the fingers, he commenced with a sponge-tent, supporting it with a piece of sponge at the top of the vaginal tube. This answered in most cases. In others, he resorted to an elastic bougie, passed half way into the uterus, outside the membranes, leaving it in for five or six hours, secured by tapes. He had employed with success the injection of water into the uterus, being careful not to rupture the membranes, and guarding against the injection of air.

DR. TYLER SMITH, after the forceps, ranked premature delivery. He had tried the various methods, and found that of Kiwisch (vaginal injections) better than puncture of the membranes. For the last few years he had used uterine injections, and preferred them. The weak point of the vaginal douche was, that sometimes labor was several days, or even a week, before it came on. He injected about half a pint of warm water, of the temperature of the blood, into the uterus, through a catheter passed four or five inches into the uterus. He had never known the coming on of labor to be deferred as much as twelve hours, and generally it had commenced immediately. He had never known hemorrhage produced by it. He objected strongly against the incision of the cervix, and would regard laceration as a grave accident. He would employ the new method of Dr. Barnes, but would caution the profession against sudden dilatation, which would be liable to produce contusion, or rupture of the part.—(*Lancet*, April 13, 1861.)

VII.—*On the Removal of the Cervix Uteri.* By ROBERT GREENHALGH, M.D., London.

The safety and desirability of removal of the neck of the uterus in certain diseased conditions, is a question still *sub judice.* Though successful in the hands of Lisfranc, Hugier, and others, still fatal results have ensued, producing a very reasonable dread of the procedure. What are the most suitable cases, and by what means can the operation be most safely effected? These questions are yet to be decided.

Mrs. H., aged twenty-five, commenced to menstruate at fifteen; always suffered much pain about the back and loins at the time of the discharge, which was free and lasted four or five days. General health excellent. After marriage a "swelling came down," interfering with intercourse. This was found to be the cervix uteri protruding between the labia to the extent of an inch, enlarged, corrugated, and sensitive. A line of demarcation was found, indicating the commencement of the healthy structures. The sound passed easily into the body of the uterus to the extent of 5½ inches.

She was placed under the influence of chloroform, and about 2½ inches of the hypertrophied structure removed by the écraseur. The operation took half an hour, with very little bleeding. She progressed satisfactorily for ten days, when the catamenia appeared without pain, copious, and lasted a week. Two months later, a careful examination detected the cervix, of normal size and appearance, and the os pervious, admitting the sound to the extent of 3 inches.—(*Med. Times and Gaz.*, Sept. 7, 1861.)

VIII.—1. *Cystic Tumors of the Vagina.* By J. F. NOYES, M.D., Waterville, Mass.

Cystic tumors of the vagina are rarely met with in life. M. Nélaton describes them as having their origin in a diseased condition of the superficial and deep-seated follicles of the mucous lining of the vagina. Scanzoni, however, believes they are frequently developed in the peri-vaginal cellular tissue. Rokitansky admits this view.

Mrs. S., aged forty, discovered, while pregnant, sixteen years ago, a small bunch or tumor just within and on the front of the vagina. Since her accouchement, it has rapidly increased, producing much suffering. It was found on examination to be a soft elastic tumor, as large as a coffee-cup, filling and distending the vagina, and protruding considerably from the vulva. For ten years it had occupied this position, preventing copulation, and causing dragging pains. With difficulty the finger was introduced, and it was impossible to make out how far the tumor extended up the vagina. It might easily have been taken for a prolapsus of the bladder, or an enterocele. By means of a small trocar and canula, it was found to contain a glairy substance, in color and consistence resembling thick honey. It was now fully laid open, lengthwise, and emptied, when its inner surface was found to be lined by a perfectly smooth membrane. The thickness of the cyst was nearly a quarter of an inch. The tumor was next dissected away at its base, and the edges of the wound united by silver wire. In three weeks recovery was complete.—(*Boston Med. and Surg. Journal*, April 11, 1861.)

2.—*Ibid.* By WALTER CHANNING, M.D., Boston.

Dr. Channing was called upon to attend an operation in a case, where the growth filled the vagina. It was always external when the patient was erect, occasioning great annoyance from its size, and the weight and friction of the dress. An incision was made through its whole length, and it was then carefully dissected out. No sutures were employed. The vagina was replaced, and kept *in situ* by a compress.

In another case, the tumor was bi-lobed, the whole surface red and tender. The cyst was opened freely, discharging a watery fluid, and the treatment followed out as before. These growths may be distinguished from pelvic abscess by the fact that the latter never protrudes externally, is generally in the upper part of the pelvis, and is complicated with severe constitutional symptoms, as intense pain, loss of appetite, emaciation, etc. From dislocation of the rectum and bladder they are distinguished by digital examination and the catheter.—(*Ibid.*, May 30, 1861.)

IX.—*Permanent Pressure in the Reduction of Inversio Uteri.* By M. BROCKENDAHL, Germany.

Dr. Tyler Smith has reported a case of this kind, which led M. Brockendahl to resort to the employment of continued pressure in a case brought to his notice. A primipara, aged twenty, was delivered by the forceps after a labor of twenty-four hours. Unconsciousness followed the delivery, and for several years she remained an invalid, with paralysis of the bladder, and swelling of the lower extremities, and also daily hemorrhage, in addition to regular menstruation every six weeks. After much unsuccessful treatment, a thorough examination revealed an inversion of the uterus. The womb formed in the vagina an elastic pyriform tumor 2½ inches long, pressure upon which induced an increase of the sanguineous discharge. A thin circular fold of the vagina closely embraced the womb, and might have been mistaken for the cervix. The displacement had taken place gradually, and as no sign of peritonitis had ever presented, M. Brockendahl determined, although the inversion was complete, and the organ thick and unyielding, to make an effort at reduction. After reiterated warm baths, he attempted to insert the entire hand into the vagina, but without success, the external aperture being much contracted by a scar, the result of laceration of the perineum. Treatment was then discontinued for one year, when an attempt was made to soften the womb by kneading it with the hand, in hopes that its texture, rendered more yielding, might admit of a return of the fundus. This failing, he inserted Braun's colpeurynter, removing it daily, and again distending it to the utmost. On the fourth day, the inversion had disappeared, the cervix admitted the insertion of three fingers, and the lips were well defined. The organ was found to exceed its usual dimensions by more than half an inch. The cold douche soon restored it to its normal size, and the hemorrhage ceased entirely.—(*Deutsche Klinik; Gaz. des Hôp.*)

X.—*On Saccharine Fermentation in the Milk within the Female Breast.* By GEO. D. GIBB, M.D., London.

Dr. Gibb had a child brought to him, seven weeks old, in the most extreme emaciation, the mother appearing in perfect health. No disease could be discovered; it never seemed satisfied, but was ravenous, and required spoon food additional. The milk seemed rich, but under the microscope exhibited myriads of animalcules, *vibrio lactis.* These were evidently the result of fermentation of the saccharine element, which undoubtedly took place within the breast. There was an absence of mammary heat and congestion, but much sexual excitement, which it became necessary to control by moral and medical treatment. Cow's milk was given, and improvement rapidly ensued.

The fermentation was the result of the presence of an unusual quantity of sugar. These animalcules may be generated from the surface of the mucous membrane of the lactiferous tubes, by the fermentation of the sugar at the moment of its secretion from the blood, and hence the explanation of the large number found in milk so affected. The necessary connection existing between the mammary glands and uterine organs in the body satisfactorily explains the influence of the latter upon the former, in producing much heat and internal congestion through reflex nervous agency; these glands become morbidly irritated, as it were, and cause slight fever. This is usually early in lactation, though it has been seen in prolonged lactation, when the vision becomes impaired, and, in one case, a shade of yellow was seen by one eye, and green by the other.

In conclusion, it may be added, that when an infant becomes extremely emaciated, with copious exudations, and the mother appears healthy, with a good supply of milk, examination becomes a matter of urgent necessity; and if the milk is found to contain infusoria, it must be gradually dispensed with, and such measures adopted as shall arrest the starvation of the child.—(*Archives of Medicine.*)

MATERIA MEDICA AND THERAPEUTICS; MEDICAL CHEMISTRY; TOXICOLOGY AND LEGAL MEDICINE.

BY EMIL FISCHER, M.D.

MATERIA MEDICA AND THERAPEUTICS.

I.—*Solution of Phenic Acid in Tinea and Scabies.* By M. BAZIN.

According to the experiments made at the hospital *Saint-Louis*, in the service of M. Bazin, and communicated by M. Jean Lemaire to the *Académie des Sciences*, the following solution constitutes a very economic remedy of scabies and tinea:—

℞.—Phenic acid,	1 part;
Acetic acid at 8 degrees,	40 parts;
Water,	100 parts.

In the treatment of tinea a compress soaked in this solution is applied once a day. In scabies, a single lotion is sufficient to kill the ascarus. The acetic acid is added to the preparation in order to make the remedy penetrate beneath the epidermis and to the bottom of the hair bulbs.

Phenic, or carbolic acid, is a product obtained by the distillation of coal, and has, consequently, but little venal value; the author has likewise reflected upon the hygienic applications this acid could receive. The most important is the preservation of dead bodies. M. Lemaire states that the cadaver of a man could be maintained in an excellent state of preservation for less than fifty centimes.—(*Bulletin Général de Thérapeutique*, and *Journ. de Pharnacie*, July, 1861.)

II.—*On the Use of Cinchonine in the Treatment of Intermittent Fever.*

In the General Hospital of Munich cinchonine has been for several years employed very successfully in the treatment of intermittent fever. The quantity administered during a day is fifteen grains, divided into two doses, of which the first contains ten, and the second five grains. It is necessary, for a complete cure, to give this quantity three or four times, at intervals of three to four days. From the favorable results obtained in the hospital mentioned above, no definite conclusion can, however, be drawn, as intermittent fever in Munich is generally an imported disease, and not as obstinate as in districts where it is endemic. In order to test the efficacy of cinchonine on a greater scale, and with a view of substituting this article for quinine on account of its greater cheapness, the Bavarian government has ordered experiments to be made in the prisons and other public institutions under its control.—(*Neues Repertorium für Pharmacie*, X, 4 and 5, 1861.)

III.—*Iodine in Tubercular Meningitis.* By DR. BOURROUSSE.

Dr. Bourrousse, at the conclusion of a long memoir laid before the Académie de Médecine, states: 1. All, or almost all, cases of tubercular meningitis, which have resisted hitherto all therapeutical procedures, may now be deemed curable. 2. One or two hundred thousand infants will owe their lives each year to the employment of iodide of potassium in acute hydrocephalus. 3. This meningeal affection is the only tubercular disease which has been rendered curable, and this success will probably lead to amendment in the mode of treating other forms of tuberculization.—(*Moniteur des Sciences Med.*, No. 73, 1861.)

IV.—*Combination of the Essential Oil of Matico with Balsam of Copaiba.*

By DR. FAVROT.

Matico (*piper angustifolium*) is a pepper-shrub of South America, introduced into France by M. Dorvault, who brought it from the World's Fair of London. The principal property of matico is that of an astringent.

At the same period some English physicians conceived the idea of administering the decoction internally in cases of chronic discharges from the uretha. In Peru, the remedy had been employed for a long time with the same intention. In the *Flore Médicale* of that country, page 28, the following passage can be read: "*Incolæ ad ulceras cancrosas et gonorrheas a lue venerea ortas decoctum affatim hauriunt.*"

After M. Dorvault, his successor, M. Grimaud, continued the experiments, and arrived at the conclusion that the properties of matico are owing to the essential oil which this plant contains in large quantity. M. Favrot prepared capsules with this oil, administered them, and obtained cures in the majority of cases where he employed them.

The author found that the diuretic action was too intense, and, in order to modify it, had the idea of combining the oil of matico with balsam of copaiba. The following is the formula of this preparation:—

Balsam of copaiba,	100;
Essential oil of matico,	5;
Magnesia,	q. s.

For one hundred boles, to be covered with gluten according to the method of M. Raquin. Each bolus contains one gramme of copaiba and fifty centigrammes of essential oil of matico, which represents an equivalent of fifty grammes of leaves employed in extracting it.

In this combination the balsam loses its nauseous taste as much as with peppermint. The effect of these boles in the mentioned cases was remarkable: "It is nearly four years," says M. Favrot, "that I treat with this preparation acute and chronic discharges with advantage, if I compare it with the analogous preparations which have been employed until the present day."

The local treatment is conducted by injections with distilled water saturated with matico, which M. Grimaud prepares in the following manner:—

Matico, 1 kilogr;
Water, 2 "

To obtain 1000 of saturated water, he macerates the matico in cold water for twenty-four hours before distillation. For the general or internal treatment the boles or capsules, of which the formula has been given above, must be used.—(*Journal de Pharmacie et de Chimie*, July, 1861.)

V.—*Electuarium of Cubeba, Copaiba, and Matico.* By M. DEBOUT.

The most efficacious, and at present most employed, preparations in the treatment of blennorrhagia being electuaries resulting from the combination of cubeba and copaiba, M. Debout does not hesitate in recommending the following formula for experiment:—

Copaiba,	30 grammes;
Cubeba,	45 "
Essence of matico,	2 "
Powdered sugar,	q. s.

To be taken in three days, enveloped in unleavened bread. Each daily quantity should be divided into at least four doses, so as to maintain the urine constantly in a medicated state.—(*Bulletin de Thérapeutique*, and *Jour. de Pharmacie*, July, 1861.)

VI.—*Distilled Water of Copaiba.* By DR. EDWARD LANGLEBERT.

Dr. Langlebert calls attention to this new distilled water, which he has employed about a year in urethral blennorrhagia.

Every physician knows that copaiba taken in the stomach acts locally after passing the kidneys, by aid of the urine, and this action has been attributed to a certain modification which it undergoes by the *vital chemistry* of the economy. The author views it as a case of distillation, in which the urine becomes the aqueous solvent of the oil of copaiba.

It is this idea which suggested to him the employment of the Distilled Water of Copaiba as a vehicle for urethral injections. The following are some of the injections which he has most frequently prescribed:—

Distilled water of copaiba, three fluid ounces;
Sulphate of zinc, six grains;
Tincture of catechu, fifteen minims.

Mix.

Distilled water of copaiba, three fluid ounces;
Sulphate of zinc, four and a half grains;
Lapis divinus, one and a half grains.

Mix.

Distilled water of copaiba, three fluid ounces;
Sulphate of zinc, six grains;
Levigated oxide of zinc, a drachm.

Mix.

Distilled water of copaiba, three fluid ounces;
Tannic acid, or catechu, fifteen grains.

Mix.

Numerous experiments have convinced the author that these injections are superior to similar preparations in which distilled water or rose water are used in lieu of the copaiba water.

Copaiba water is prepared by simply distilling water along with copaiba, and separating the supernatent volatile oil. A metallic still is to be preferred, owing to the bumping that occurs in a glass retort.

Administered internally, its effects are like those of copaiba, but milder. It has been prescribed in quantities of four to six ounces per diem, with a few drops of cherry-laurel water, to cover its taste. It is taken with less repugnance, and has never caused pain in the kidneys, frequently produced by ordinary copaiba.—(*Gazette des Hôpitaux*, and *Am. Journal of Pharmacy*, September, 1861.)

VII.—*Formula for the Administration of Chloroform, Ether, Turpentine, Camphor, or Essential Oils.*

M. Vee recommends the following as a valuable means for the equable administration of these medicinal substances: Chloroform, (or any of the above,) 4 parts, (or less;) oil of sweet almonds, 15 parts; powdered gum arabic, 10 parts; water, 100 parts; syrup, 25 parts. The chloroform is to be dissolved in the oil, and rapidly emulsified, to prevent evaporation. *Syrup of Chloroform* may be well prepared by the following formula: 10 parts by weight of chloroform are to be dissolved in 60 of oil of sweet almonds, 40 parts of gum added, and an emulsion formed with 350 parts of water. In this cold emulsion, placed in a close vessel, 540 parts of sugar are to be dissolved. It is a very stable syrup, rendering water white on admixture with it, and it contains exactly one-hundredth of its weight of chloroform.—(*Med. Times and Gaz.*, June 8, 1861, from *L' Union Méd.*, No. 49.)

VIII.—*Ferri Carbonas Effervescens: a New Form of Chalybeate.*

Dr. T. Skinner, in a communication to the Dublin Medical Press, recommends the following formula for preparing effervescing carbonate of iron:—

℞.—Acidi Tart.	℥iij;
Sodæ Bicarbonatis,	℥v;
Ferri Sulph.	ʒx;
Pulv. Sacchari,	℥j, ʒvj;
Acidi Citrici,	ʒij.

1. Mix the sulphate of iron with the sugar and part of the tartaric acid. 2. Mix the citric acid with the remainder of the tartaric acid and the bicarbonate of soda. 3. Add the mixtures, and thoroughly incorporate them by sifting. 4. The whole is now to be thrown into a metallic pan set in a water bath; in a few minutes it will separate, when it should be rapidly stirred until granules are formed. If preferred, it may then be flavored with oil of lemon; hitherto, however, the preparation has been without it.

When the above is carefully prepared, it has all the appearance of the popular and well known granular effervescent citrate of magnesia, with the addition of a slight yellowish-green tint. Every drachm and a half contains ten grains of sulphate of iron, which, with a complement of bicarbonate of soda, is certain to produce, in a state of solution, four grains of nascent protocarbonate of iron.—(*London Pharm. Journ.*, August, 1861.)

IX.—*Abortion in Cows occasioned by the Ingestion of Ustilago Madis.*

This ustilago is a parasitic mushroom, which occurs on maize as ergot does on rye. In a cow-house, where cows were fed on Indian-corn infected with this parasite, eleven of their number aborted in eight days. After their food was changed, none of the others aborted. The better to be convinced of the poisonous nature of these mushrooms, the author, after having dried and pulverized them, administered six drachms to two bitch-dogs with young, which soon caused them to abort.—(*Annal. Méd. vetr. Belge*, and *Am. Journ. of Pharmacy*, September, 1861.)

X.—*Alcohol—Its Action and Uses.*

The question of the action of alcohol on the system, and its value as a dietetic and therapeutic agent, is now attracting much attention, both among the members of our profession and the scientific world at large. No doubt can be entertained of the importance of a consideration of the subject—a consideration, however, into which our limits will not allow us fully to enter. If there were one cherished view which we thought chemistry had taught us, it was surely that alcohol was oxidized in the system, and thus made subservient, if not to the formation of some of the tissues of the body, at any rate to the maintenance of animal heat. However indisposed physiologists may have been of late years to give in their adhesion to the theories of Liebig as to the division of alimentary materials, we think that most have been, and probably many will still be, disposed to consider the substance we are speaking of in the light of a heat-producing agent. Our opinions on this point have, however, been somewhat rudely assailed, and the position which alcohol has occupied as a dietetic article is threatened with imminent danger. As from the chemists we received the theory of its combustible nature, so from chemical research and experiment now comes the opposite doctrine of its entire elimination, unchanged, from the body.

Considering the vast amount of alcohol which is daily consumed, whether as a general article of diet, or in the treatment of disease, it becomes a matter of essential importance that correct principles should be laid down with reference to its *modus operandi*, and the manner in which it is disposed of in the system. We cordially hail, therefore, the appearance of the work of Messrs. Lallemand, Perrin, and Duroy, (*Du Rôle de l'Alcohol et des Anesthésiques dans l'Organisme*, Paris, 1860,) which gives us the results of the most recent experiments and researches on the subject. A careful perusal of this work has convinced us that some of our views of the dietetic value of alcohol require modification; but we cannot, on that account, allow the evidence which is brought forward, and which does not appear to us conclusive on the point, to make us discard altogether the substance of which we are speaking from our list of alimentary materials.

If we were briefly to sum up the facts which the researches of the above authors seem to have established, they would be these: That, after any fluid containing alcohol is taken, the latter becomes eliminated, unchanged, by the various secreting organs—the skin, the liver, the kidneys, the lungs; and not only this, but that it is deposited in all the tissues, and can be extracted alike from the substance of the brain, the liver, the muscles, and the cellular tissue, as well as from the blood. It is right to observe that, even when small quantities of alcohol were taken, traces of it could be found in the excretions; thus proving that it is not simply when the substance is taken in excess that it becomes eliminated without change.

From the results of their experiments, MM. Lallemand, Perrin, and Duroy think they are justified in concluding that all the alcohol ingested, with the exception of a small quantity which they and other experimenters have found converted into acetic acid in the stomach, is eliminated from the body, without undergoing any change whatever; and that in this respect it resembles in its action the various anæsthetic agents, such as chloroform, etc. From these conclusions necessarily follows the inference that alcohol cannot be considered in the light of an alimentary substance.

We believe Dr. Percy was the first to show that, after poisoning by alcohol, this substance could be found in the ventricles of the brain, as well as in the brain-matter itself; and we are all aware of the fact that fumes of alcohol are exhaled from the lungs even when only a small quantity of the fluid has been swallowed. The chief points that are new, which have been brought to light by the investigations of our authors, are the elimination of the alcohol, unchanged, through the medium of the skin, the kidneys, etc.; and the deposit in the tissues generally. It is true that Klenke had demonstrated the presence of alcohol in the urine and bile, but, with this exception, physiologists had advanced the opinion that the secreting organs did not eliminate the substance.

There cannot be a doubt of the great importance and value of the researches of M. Lallemand and his coadjutors; for supposing their results to be trustworthy—and we believe them to be so—they establish beyond a doubt the fact that, at any rate, a portion of all ingested alcohol may go the round of the circulation, traverse the various capillaries of the body, and, without undergoing any oxidation whatever, be ejected from the system in the different secretions. This portion, therefore, cannot be concerned in building up the fabric of the body, nor can it by its combustion contribute to the maintenance of animal heat. This is surely an important conclusion to have arrived at. The weak point, however, in the arguments adduced against the value of alcohol as a respiratory food, is the small quantity of it which the experimenters have been able to extract from the various secretions. It is possible that, by more delicate modes of investigation, and by the use of more subtile tests, a much larger proportion may be detected; but we are inclined to think that, until some such result is obtained, physiologists will not be disposed to abandon their views as to the oxidizable nature of the substance.—(*London Pharm. Journ.*, May, 1861, from *Br. Med. Journ.*)

TOXICOLOGY AND LEGAL MEDICINE.

I.—*Duty of a Physician to the Public in a Case of Poisoning.*

M. Tardieu, treating of this important question in medical deontology, in his lectures on medical jurisprudence at the faculty, communicated to his auditors a letter written by Lammenais to Dr. Pierquin, of Montpellier. "You have done me the honor of asking my opinion on the question, 'Is a practitioner, who perceives that a patient to whom he has been called has been poisoned, under the moral obligation of declaring his well-founded opinion to the authorities?' Without doubt, in many cases, a mere private person is not obliged to reveal to the authorities a crime of the certain existence of which he is aware, and sometimes charity may even render it a duty on his part to observe silence. But is this the case with the medical practitioner? On the contrary, is he not in an essentially different position? The physician is a public man, and he has special duties toward society which ensue from his very function, and he should advertise it of the crimes which he alone is in a condition to discover and bring home; otherwise these crimes, which are always among the most heinous, would never be known, except by some extraordinary contingency, especially now, when the art of poisoning has made such fearful progress, and when crime seems to have taken refuge in the bosoms of families, destroying all security of life. The confessor is compelled for other reasons. It is almost always the criminal who comes to him, and his conscience is a sanctuary he cannot leave. But the physician who discovers that which, so far from being confessed to him, is sought to be hidden from him, has two duties to perform—one toward his patient, and the other toward society, whose minister he is on this occasion; and if, as cannot be doubted, he ought to advertise the magistrate, when a disease exhibits alarming signs of contagion, how much more is he called upon to reveal that which implicates not some person only, but society itself?" The *Union Médicale*, while adhering to the above doctrine, cautions its readers that excessive care and circumspection should be employed before making any spontaneous declaration of the kind. Mere doubts are not to be revealed, these requiring first to be converted into a settled conviction and a commencement of certainty. —(*Med. Times and Gaz.*, July 6th, 1861.)

II.—*What constitutes Evidence of Live Birth.*

Vice-Chancellor Sir J. Stuart decided a very curious point in medical jurisprudence, the other day, in the trial of Brock *v.* Kellock. Upwards of twenty years ago, a medical man died without a will, leaving property and a widow, who was pregnant at the time of his death. As his widow, she succeeded to a portion of the effects; but in case of her having a child, and the child dying, she became, as the heir of her own offspring, entitled to a further portion. She was delivered by Mr. Freeman, now of Plymouth; and the question was, did the mother give birth to a live or dead child? Mr. Freeman distinctly stated, in his affidavit, that the funis pulsated after the separation of the cord, and that the child moved vigorously a minute before birth. He could not swear to the fact of respiration having taken place, but he remembered that the chest was full and arched, and he believed it must have breathed, because it was his usual practice not to divide the funis until respiration had taken place. He also placed the child in a warm bath, and he stated that he should not have done this, had he not considered the child alive and capable of resuscitation. His distinct opinion was, that the child was born alive, but weak; and that it died shortly after birth from the effects of a severe labor.

Dr. Robert Lee, in an affidavit, contested, in the strongest manner, the statements and opinions of Mr. Freeman. He thought it very likely that the pulsation in the finger and thumb might have been mistaken for the funic pulse. He maintained that the action of the heart, supposing it to have taken place, was no proof of life, such as should be established, because the heart of animals would contract for hours or days after separation from the body. In his opinion, respiration was necessary to establish the fact of live birth. He further said, Mr. Freeman had testified that respiration had not taken place, and that no medical man would dare to give a certificate of live birth in such a case. Dr. F. H. Ramsbotham concurred generally in the affidavit of Dr. Lee.

Dr. Tyler Smith, in his affidavit, said that the pulse of the adult and the beat of the funis were so different, that the mistake supposed by Dr. Lee was not likely to have been made. He contended that a child, whose heart was beating after its separation from the mother, could not be said to be dead; that the beating of the heart of the lower animals, after separation from the body, could not apply to the human infant; and that even in these cases, it was an evidence of vitality.

There was no proof of respiration having taken place; but Mr. Freeman's opinion upon this point was the best that could be had, and Dr. Smith showed that Dr. Lee was wrong in stating that Mr. Freeman had said no respiration occurred. He thought medical evidence was limited to the proof of life or death in a physiological point of view; that the law must decide what constituted legal life. He mentioned that medical men sometimes gave certificates of still-birth when the child moved and made attempts at respiration, if it did not fully recover itself after birth. His conclusion was, that it would be better to take a single vital act, such as the beating of the heart, which had been considered by physiologists the *primum vivens, ultimum moriens*, as a proof of live birth, than the movements of respiration, which were often not fully established for some time after birth.

The Vice-Chancellor, in his dicision, entirely affirmed Dr. Tyler Smith's view of the case, the good sense of which he greatly commended, and expressed his surprise that a man in Dr. Lee's position should have made such an affidavit. He held it proved that the child had been born alive, and refused the costs of the medical evidence on the opposing side.

Dr. Alfred Taylor made no affidavit in the case, but was appealed to by Dr. Lee and gave an opinion in favor of live birth. This decision is of importance, inasmuch as it will go far to form the law, which has hitherto, in this country, been unsettled upon the point at issue.—(*Lancet*, May 11th, 1861.)

Editors' Table.

Editorial Valedictory.—With the present number closes the career of The North American Medico-Chirurgical Review; and, as its Senior, and, for some time past, its sole Editor, it becomes my duty to offer a few words in explanation of the circumstance.

The Review was commenced five years ago under auspices eminently favorable to success; the country was never in a more flourishing condition, and the only medical periodical then in existence in this city was the *American Journal of the Medical Sciences.* Under these circumstances, the Review, founded upon the *Philadelphia Medical Examiner* and the *Louisville Medical Review*, the latter commenced only a short time previously, made its appearance as a bi-monthly. Until the present national troubles arose, it enjoyed an uninterrupted prosperity, and I am quite safe in asserting that, but for these unhappy occurrences, which deeply affect all classes and ramifications of business, no one would have thought of suspending the publication of a work which has everywhere been received with favor.

It is a self-evident fact that no medical journal can long maintain itself without a large circulation, and hence, cut off as ours has been during the last six months from the Southern States, it would be unwise to attempt to prolong an existence which would only involve further expenditure. Whatever desire the Editors might have to continue the enterprise, they could not regard with indifference the interests of their publishers, who have, upon all occasions, responded, in the most prompt and generous manner, to every demand designed to promote the usefulness of the work. Our editorial relations, too, are materially changed. For the last three years, Dr. Richardson, one of the originators and planners of the journal, has been a resident in a distant city, with no leisure to afford me any substantial aid. In order to supply a loss which, to me, as well as to the readers of the journal, has been a serious one, my son, Dr. S. W. Gross, became associated with us in the editorial management of the work, and, although he kindly took upon himself all the drudgery which such an enterprise must always necessarily impose upon some one, yet the responsibility of the publication essentially devolved upon myself. He, too, has been absent for some time past; and I am, therefore, all things considered, rejoiced that the time has arrived when I shall be able to devote myself, untrammeled, to other and more congenial pursuits.

Five large volumes, comprising altogether nearly 6000 closely-printed pages, have been issued under our auspices, and it is confidently believed that there is no medical periodical in the English language which has furnished, within the same compass, and during the same period, a greater amount of valuable material. We are the more emboldened to say this because our own contributions have been comparatively few. Many of the reviews are characterized by marked ability and learning, while quite a number of the original articles would compare favorably with those of any medical journal in the world. The abstracts, generally prepared with much care, have been largely read and widely copied, both at home and abroad.

It would be invidious to single out from our list of contributors the names of particular writers, whose readiness to serve us has placed us under special obligations; but we should be unjust to our feelings if we omitted to refer, in this connection, to Dr. John Bell, whose writings are so well known to the profession, and whose prolific pen has so often enriched the pages of the Review. To Dr. Richard J. Dunglison my acknowledgments are due for important aid rendered me in bringing out the last three numbers.

In taking a retrospective glance at our labors, as Editors, we have the consolation to know that our pages have never, in a single instance, been sullied by the slightest personality, or willful injustice. While we have endeavored to discharge our multifarious and responsible duties with the strictest impartiality, we have never lost sight of the dignity of our office as public servants of the profession, or of the sacred trust confided to us by our subscribers. We lay aside the robes of office as white and as pure as they were when we entered upon our labors five years ago. If, in our dealings with authors, we have occasionally been severe, our verdict has always been tempered with mercy. Every just and laudable effort to improve our medical literature, and advance the interests of science, has invariably met with encouragement; while shallow forwardness and self-complacency have as invariably been rebuked.

The Review has, from its commencement to its close, paid liberally for every article, of the slightest importance, that has appeared in its pages. Owing to this circumstance the work has not, commercially speaking, been remunerative, either to its conductors or its publishers, but they confidently believe that it has been productive of great good to others, and they, therefore, feel that their own labor has not been bestowed in vain.

The regularity with which the work has always appeared on the day of its promised publication must have struck all our readers. This has been due to the fact that we have never, at any time, been in want of material; on the contrary, we had, invariably, several communications lying over from one number to another, so that we were never obliged to hurry either our contributors, the printers, or ourselves. A journal conducted upon any other principle must be productive of immense annoyance, and often of great disappointment to all concerned.

To our contemporaries of the medical press we beg leave, in conclusion, to tender our most cordial acknowledgments for the courtesy and kindness which, with few exceptions, they have so uniformly extended to us. Our greatest regret in severing our editorial connection is, that we shall no longer have the benefit of their welcome exchanges.

S. D. GROSS.

PSYCHOLOGY OF SHAKSPEARE.—Little did the great English dramatist imagine, even supposing him to have indulged in the most sanguine expectations of posthumous fame, that his plays would be regarded not only as the noblest creations of genius and the finest and most truthful delineations of human character, but that they should come to be studied as an encyclopedia of philosophy, wit, botany, mental pathology, and even medicine. Mrs. Jamieson has given us the "Women of Shakspeare," another writer The Flowers spoken of by Shakspeare, and we have now to notice a volume whose title heads this article. It is written by Doctor Bucknill, one of the authors of "A Manual of Psychological Medicine, or of the History, Causes, etc., and Treatment of Insanity."

Although we do not sit in our critical chair at this time, but merely act the part of a sketcher, we cannot refrain from expressing our regret at the title of psychology applied to a study of the morbid states of mind portrayed by Shakspeare in many of his dramas. Dr. Bucknill defends himself by telling us: "The derivation and original use of a term, however, not unfrequently differ from its acquired and permanent use, and the term psychology has, of late years, been used to denote all that relates to the department of science which takes cognizance of irregularities and aberrations and diseases of the mind." We can only account for this peculiar notion of the restricted application of the study of psychology by the author, to the probable fact of his own line of reading leading him so much in one channel as to make him overlook the claims of a wider philosophy for that which he would thus appropriate exclusively to a particular purpose. Psychology, as teaching the laws and relations of the changes and phenomena which take place in the mind during the intellectual operations, is not more the study of morbid or unsound states of mind, than physiology is of morbid states of the functions of the body. Feuchtersleben, in his erudite work on medical psychology, tells us that the foundations of this science are philosophy and physiology, which treat, the former of spirit, the latter of the organism, while the subject of medical psychology is the relation of each to the other. He believes that animal psychology (zoo-psychology) may throw much light on human psychology, especially with regard to instinctive impulses. Mental education, according to the same writer, makes a part of medical psychology. In the proper and generally received acceptation of the word, we can readily speak of a psychical mode of cure, and of psychical remedies. Were we to admit Dr. Bucknill's gloss on the word, these phrases would imply morbid or pathological mode of cure and of remedies. In the treatment of a lunatic, we have not to deal with a patient in a psychological state, but with one on whose deranged mind we act by the judicious introduction of psychical remedies, viz.: of the affections, sentiments, and reasoning faculties, which have been appropriately called the dietetics of the mind.

But, in obedience to our first intention, we pass from the critical to the admiring mood, and follow gratefully the lead of Dr. Bucknill in his excellent analyses of the mental characters of several of the creations of Shakspeare. This wonderful genius himself, the pride and glory of his country, is called, in words which cannot be considered too strong, "the greatest poet of all ages and pre-eminently the most truthful analyst of human action. Shakspeare not only possesses more psychological insight than all other poets, but than all other writers, the sacred writings alone excepted. He has been aptly called 'a nature humanized.' He has, above all men, the faculty of unraveling human action. Compared with his profound knowledge of the surface and depths of the human soul, the information of other great minds, even of such wondrously vigorous intelligences as those of Plato and Bacon, were obscure and fragmentary." The number of characters to which Shakspeare has attributed disordered states of mind, and the extent to which he has written on the subject, show that it was a favorite study of his—"on no other has he written with such mighty power." His opportunities for observation in this line were great. When he wrote there was, with the exception of the poor and small establishment of Bethlehem Hospital in London, no asylum for the insane in the kingdom. The afflicted in this way were not secluded from the world as they are now. "If their symptoms were prominent and dangerous, they were, indeed, thrust out of sight very harshly and effectually; but if their liberty was in any degree tolerable, it was tolerated, and they were permitted to live in the family circle, or to wander the country. Thus every one must have been brought into immediate contact with every variety of mental derangement; and every one who sought the knowledge of their peculiarities would find it at every turn." It was reserved for the alembic of the great mind of Shakspeare to convert these opportunities into psychological science.

Dr. Bucknill, in these psychological essays, opens to us new views of the wonderful and various powers of Shakspeare, and has gone beyond any previous commentator in his searching analysis of the strong and overpowering passions exhibited in the pages of the great poet. Although we mark as quotations many passages which follow, we may as well tell our readers that the intervening remarks are also, with slight exceptions, given in his own words. His first selection is "Macbeth, the most awful creation of the poetic mind, and a study every way worthy of those to whom the storms of passion present the frequent cause of mental disease." This drama, "in the mental development of the bloody-handed hero and of his terrible mate, affords a study scarcely less instructive than the wild passionate madness of Lear, or the metaphysical motive-weighing melancholy of the Prince of Denmark."

"The great interest of this drama is most skillfully made to depend upon the conflicting emotions of sympathy with a man struggling under fearful temptation; horror excited by treachery and foul murder; awful amazement at the visible grasp of the Spirit of Evil upon the human soul; and of satisfied justice at the hell of remorse into which he is plunged."

"Macbeth is no villain in grain, like Richard the Third or Iago, rolling in the devil's work because he likes it; but a once noble human nature, struggling but yielding in a net of temptation, whose meshes are wound round him by the visible hand of the Spirit of Evil. Slave as he is to that soldier's passion, the love of fame and power, he is not without amiable qualities. He was once loved even by his arch-enemy Macduff, to whom Malcolm says,

'This tyrant whose sole name blisters
our tongues,
Was once thought honest; you have
lov'd him well.'

"Let it not be thought that we attempt to palliate the guilt of Macbeth. In a moral point of view, this is impossible. If his solicitings to crime are supernatural, combined with fate and metaphysic aid, he is not blinded by them. With conscience

> fully awake, with eyes open to the foul nature of his double treachery, although resisting, he yields to temptation. He even feels that he is not called upon to act to fulfill the decrees of destiny:—
>
> 'If Chance will have me king, why Chance may crown me
> Without my stir.'
>
> "Had he with more determination resisted the temptations of the woman, he might have falsified the prophecies of the fiend and put aside from his lips the poisoned chalice of remorse, maintained from rancors the vessel of his peace, and, above all, have rescued the eternal jewel of his soul."

Dr. Bucknill does not, as a "mental physiologist," withhold his belief in influences of the supernatural event, which is not only the starting-point of the action, but the remote cause of the mental phenomena. The professed moralist is slow to accept the teaching of the drama; but where shall we find a more impressive lesson of the manner in which the infraction of the moral law works out its own punishment than in the delineation and agonies of the torture of Macbeth? The fiercer temptation in the solicitings of the evil one, and the agency of Macbeth's terrible human tempter and colleague, his wife, are prominent impellers in his course to destruction. The extreme excitability of his imagination must not be overlooked, as when the supernatural soliciting of the weird sisters suggests to him an *image*, not a thought, so horrible that its contemplation

> "Does unfix my hair
> And make my sealed heart knock at my ribs,
> Against the use of nature."
>
> "This early indication of Macbeth's tendency to hallucination is most important in the psychological development of his character."

The progressive steps of the temptation, held out by Macbeth's wife, to commit the bloody deed, are well indicated in the essay before us. The woman herself has no faltering. Ambition and the desire "of sovereign sway and masterdom" are, to her undaunted metal, the all-sufficient motives of the terrible deed which she plotted and instigated, and would have perpetrated had not a touch of filial piety withheld her hand. The waverings of Macbeth in his first soliloquy indicate a sensitive appreciation of a right motive, as does the expression of sincere pity for the gracious Duncan. When Lady Macbeth joins him, he expresses his virtuous resolve, and for the first time adds "prudential reasonings." Then, continues our appreciating critic, mark the temptation to which the terrible woman subjects him—the taunts of cowardice and weakness, taunts to which a soldier gifted with personal bravery would be keenly alive, especially coming from the lips of a beautiful woman whom he loved. She further urges the temptation by comparing his vacillating desire with her own fell purpose, in that terrible passage beginning with "I have given suck," etc. Fearing that his better nature would relent, she had sworn him to the treacherous and bloody deed. She concludes by showing clearly the opportunity.

> "He reels under the fierce battery of temptation, and when she has poured her spirit into his ear and chastened his compunctions with the valor of her tongue, he falls."
>
> "The deed is done; and the terrible punishment of guilt dogs the murderer's heels even from the chamber of death. Guilt hath instantly changed the brave man into the coward. The sting of remorse extorts from him the direst expression of regret, which is in strong contrast with the woman's firmer nerve rebuking him."

The passage "Methought I heard a voice," is, in Dr. Bucknill's opinion, scarcely to be accepted as another instance of hallucination: it is rather one of merely excited imagination without sensual representation. "How exquisite is this description of sleep! How correct psychologically is the threat that remorse will murder sleep! How true the prediction to the course of the drama, in which we find that, hereafter, the murderer did 'lack the season of all natures, sleep!'" How awful is the retribution which the Nemesis of conscience works upon the guilty pair, and that before they have come to dread any earthly retribution! It is now the woman's turn to suffer. Listen to the deep sound of melancholy surging from her heart—

> "Naught's had, all's spent
> Where our desire is got without content;
> 'Tis safer to be that which we destroy
> Than by destruction dwell on doubtful joy."

The banquet scene, following the murder of Banquo, is unrivaled in dramatic force and psychological truth. The hallucination at the banquet, in which Macbeth fancies he sees the ghost of the murdered Banquo, is admirably wrought out. Unlike the air-drawn dagger, which he recognized as an hallucination, he believes this appearance to have been most real. He is at this juncture in a state of mind bordering on disease, if he has not actually passed the limit. Truly the caution given by his wife was likely to become a prophecy—

> "These deeds must not be thought on
> After these ways; so it will make us mad."

The fear was in reality, after awhile, fulfilled in the instance of the woman. Macbeth, however, saved himself from actual insanity by rushing from the maddening horrors of meditation into a course of decisive, resolute action. Henceforth he gave himself no time to reflect; he made the firstlings of his heart the firstlings of his hand; he became a fearful tyrant to his country; but he escaped madness. The rapid deterioration of Macbeth's moral nature deserves notice. In the assassination of the kindred of Macduff we find him committing a wholesale and motiveless deed of blood, thus passing from infirmity of purpose, with conscientious rebukes for the murder of the king, to the massacre just mentioned, without hesitation or remorse. Subsequently to this foul deed the tyrant supported his power with many acts of sudden and bloody violence.

"The character of Lady Macbeth is less interesting to the psychological student than that of her husband. It is far less complex; drawn with a classic simplicity of outline, it presents us with none of those balancing and contending emotions which make the character of Macbeth a wide and varied field of study." "The terrible remorseless impersonation of passional ambition delineated in the character of Lady Macbeth, is not gradually developed, but is placed at once in all its fierce power before us in that awful invocation to the spirits of evil."

The turning-point of her madness was the state of inactivity into which she fell, when her husband broke away from her support into that bloody, bold, and resolute career which followed the murder of Banquo. In Macbeth's more demonstrative and flexible nature passion was explosive; in her's it was consuming. In him the inward forces found a volcanic vent; in her their pent-up force shook in earthquake the deep foundations of the soul.

"Lady Macbeth's end is psychologically even more instructive than that of her husband. The manner in which even-handed justice deals with her, 'his fiend-like wife,' is an exquisite master-piece of dramatic skill. The undaunted metal which would have compelled her to resist to the last, if brought face to face with any resistible adversaries, gradually gives way to the feeling of remorse and deep melancholy, when left to feed upon itself. The moral object of the drama required that the fierce gnawing of remorse at the heart of the lady should be made manifest; and as her firm, self-contained nature imposes upon her a reticence in her waking moments in strong contrast to the soliloquizing loquacity of her demonstrative husband, the great dramatist has skillfully availed himself of the sleep-talking state in which she uncovers the corroding ulcers of her conscience."

The diagnosis arrived at by the "Doctor," who is introduced in the scene, appears to have been that she was scarcely insane, but so sadly troubled in conscience as to be prone to quit the anguish of this life by means of suicide.

"Unnatural deeds
Do breed unnatural troubles; infected minds
To their deaf pillows will discharge their secrets.
More needs she the divine than the physician.
God, God, forgive us all! Look after her;
Remove from her the means of all annoyance,
And still keep eyes upon her."

A passage at the very end of the drama indicates, though it does not assert, that the fear of the Doctor was realized.

"His fiend-like queen
Who, as 'tis thought, by self and violent hands
Took off her life."

The contempt of physic expressed in the oft-repeated language of Macbeth—

"Throw physic to the dogs, I'll none of it,"

gives rise to some judicious remarks by Dr. Bucknill, in which he refers to the ignorance of the leech and the mediciner of former times, who had not learned to combine the moral influences which are the true means of ministering to a mind diseased, after the manner of Lady Macbeth, with those sleep-producing oblivious antidotes, which at present form the remedies of melancholia. Such would be the course pursued by a physician of the present day—certainly by any man who would deserve to be called a psychological physician.

Dr. Bucknill, after putting the question, "What was Lady Macbeth's form and temperament?" criticises Maclise's representation of her in the painting of the banquet scene, as a woman of large and coarse development, a Scandinavian amazon. According to the author's conception, Lady Macbeth was a lady, beautiful and delicate, whose one vivid passion proves that her organization was instinct with nerve force, unoppressed by weight of flesh. Probably she was small; for it is the smaller sort of women whose emotional fire is the most fierce, and she, herself, bears unconscious testimony to the fact that her hand was little. The drama contains many indications, that to outward appearance she was gentle and feminine.

Dr. Bucknill, in the same spirit of appreciative analysis, reviews the character of *Hamlet* as elaborated by Shakspeare. He says, most truly, that all critical study of Hamlet must be psychological, and although criticism upon it may seem to be exhausted, yet "some leavings of treasure will be discoverable to those who seek it in an earnest and reverent spirit." It is known that Shakspeare devoted more time to this piece than to any other of his works, and that in its construction he altered and realtered it much.

> "It was the labored and elaborate result of years of toil, of metaphysical introspection, and observation. It was the darling child of its great author, and ran some risk of being a little spoiled."

The first scene, where the Ghost appears to the sentinels on watch, is constructed with exquisite dramatic verisimilitude. It takes possession of the mind and the imagination at the commencement. Hamlet is from the first represented in that mood of melancholy which vents itself in bitter sarcasm. In his pure and sensitive mind the conduct of his mother has produced shame and keen distress. In his passionate outburst of grief, given by the poet, we see the conflict between religious belief and suicidal desire, in which the former prevails. The early passage beginning "Thrift! thrift! Horatio," "seems to give the key-note of Hamlet's temper, namely, soul-crushing grief in close alliance with an inimical, often a broad humor, which can mock at despair." The courage of the Prince is of the noblest temper. After the ghost has told the terrible tale and has disappeared, Hamlet becomes wild with the feeling of revenge; but in a moment he passes from the terrible to the trivial—a state and a transition of mighty emotion into lowliness of action, which Dr. Bucknill asserts is "one of the finest psychological touches anywhere to be found in the poet."

> "How it is that the resolution of Hamlet to put on the guise of madness follows so quick upon the appearance of the ghost to him, (indeed while the spirit is yet present, though unseen, for the intention is expressed before the final unearthly adjuration to swear,) we are unable to explain."

The purport of his feigned madness is not very obvious. It was, to use the language of Schlegel, acted with inimitable superiority. There are those who believe that the Prince of Denmark was actually crazed, and who cite as one strong proof of the fact his harsh and cruel treatment of Ophelia, whom he really loved. Dr. Bucknill sums up the mental condition of Hamlet in the following words:—

> "His conduct to Ophelia is a mixture of feigned madness, of the selfishness of passion blasted by the cursed blight of fate, of harshness which he assumes to protect himself from an affection which he feels hostile to the present purpose of his life, and of that degree of real unsoundness, his unfeigned 'weakness and melancholy' which is the subsoil of his mind."

In reference to his feigned insanity, the author remarks:—

> "The characteristics of this feigned form are those of mania, not indeed violent, acute, and demonstrative, but mischievous, reckless, and wayward, and so mingled with flashes of native wit, and disguised by the ground color of real melancholy, showing through the transparency of the feigned state, that Hamlet's character becomes one of the most interesting and complicated subjects of psychological study anywhere to be met with."

But we find that we must forego the pleasure of being any longer the medium between our readers and the psychological critic and delineator of Hamlet, and draw to a close our repetitions of his text and glosses of his loving and subtle study of the great dramatist. Of the next and kindred essay on Ophelia, we cannot do more than introduce her, in the words of Dr. Bucknill, as a

> "Child of nature in simplicity and innocence; without guile, without suspicion, and therefore without reserve, or that degree which often

simulates a modesty more dainty than the modesty of innocence." "She says nothing of herself, and yet we seem to look into the very recesses of her clear soul; thus presenting one form of contrast to the being with whose fate her own was entwined, who, constantly soliloquizing and self-analyzing, nevertheless leaves upon us the impression that we know the vast amplitude of his thoughts and feelings but dimly and apart." "Sensitive and imaginative, and devoted, the poor girl was endowed with all the faculties of moral suffering. That she should suffer greatly, undeservedly, irremediably, was needful in order to make her the object of that intense pity which the character excites; and which was certainly wanted in the drama to perfect it as a tragedy. The character is not very prominent, but it so entirely seizes upon our sympathy and pity, that in this respect it leavens our regard for the whole play."

The portrait of Ophelia drawn by the author is in the very best style of art, and would alone commend the entire volume to the regards of the reader.

"King Lear" follows in this gallery of dramatic paintings.

"Oppressed by the power and magnitude of the passions, as depicted in this most sublime and awful of poetic creations, it is only after the senses have become accustomed to the war and turmoil that we throw off the stupor, and dare to look down upon the throes of Titan, and begin to recognize the distinctive features of the fierce commotions."

A new field of psychological investigation thus opened is surveyed and scanned by Dr. Bucknill in every part, and with a keen and discriminating eye to its rich and rare productions.

Timon of Athens is the next in the list of the characters for psychological study. To this succeed Constance, Jaques, Malvolio, Christopher Sly, Comedy of Errors. Such an enumeration cannot fail to pique a curiosity to which in degree we have ministered, in bringing out a part of the rich material furnished by the author in his essays on Macbeth and Hamlet. We have shown, however imperfect this sketch of ours may be, that, notwithstanding the many critical commentaries on Shakspeare by such men as Johnson, Stevens, Hazlitt, and Coleridge among the English, and Schlegel and Goethe among the German scholars, Dr. Bucknill, by his Psychology of Shakspeare, may claim a place, and that not an inferior one, in this illustrious company, for giving us new insight into the creations of the great dramatist and into human nature, of which there are so many striking varieties.

THE LATEST MEDICAL PUBLICATIONS.—We have just received, too late for more extended notice, the following recent publications, which we refer to very briefly, as our want of space prevents us from doing them justice in any other way.

1. The Diseases of the Prostate, their Pathology and Treatment; comprising the second edition of "The Enlarged Prostate," and a dissertation on "The Healthy and Morbid Anatomy of the Prostate Gland." Jacksonian Prize Essay for 1860. By Henry Thompson, F.R.C.S., Assistant-Surgeon to University College Hospital, etc. 8vo., pp. 360. London: John Churchill, 1861.

This valuable and handsome work, creditable alike to every one concerned in its publication, and especially to its author, to whom also the Jacksonian prize for 1852 was awarded on "The Pathology and Treatment of Stricture of the Urethra and Urinary Fistulæ," is deserving of commendatory notice, which we should be glad, were it in our power, to give to the fullest extent.

2. On the Parasitic Affections of the Skin. By T. McCall Anderson, M.D., Physician to the Dispensary for Skin Diseases, etc. 8vo., pp. 152. London: John Churchill, 1861.

Interesting from its own merits as a careful analysis and discussion of parasitic cutaneous diseases, and also because of the novelty of the subject. The affections referred to are favus, tinea tonsurans, alopecia areata, pityriasis versicolor, phthiriasis, and scabies.

3. The Causes and Treatment of Imperfect Digestion. By Arthur Leared, M.D., etc. 12mo., pp. 218. London: John Churchill, 1861.

4. On the Sounds caused by the Circulation of the Blood. By the same author. (Pamphlet.) 8vo., pp. 22. London: John Churchill, 1861.

These publications—the latter a thesis for the degree of M.D. in the winter of 1860, the former, we are told, the result of a long-continued attention to derangements of digestion—exhibit accuracy of observation and reflection.

5. Lectures on the Diseases of Women. By Charles West, M.D., F.R.C.P., etc. Second Amer. from the 2d Lond. edition. 8vo., pp. 483. Blanchard & Lea, 1861.

An improved edition of a work which has already established itself in the favor of the profession as a complete treatise on the important subject of which it treats.

The New Sydenham Society.—The following works will (should nothing unforeseen prevent) be issued during the current year:—

The Series for 1861.

I. A Year-Book of Medicine and Surgery of 1860. (Already out.)

II. A volume of selected monographs, comprising:—
  1. Czermak on the Practical Uses of the Laryngoscope.
  2. Schrœder Van Der Kolk on Atrophy of the Brain.
  3. Dusch on Diseases of the Cerebral Sinuses.
  4. Esmarch on the Uses of Cold in Surgical Practice.
  5. Radicke's Papers on the Application of Statistics to Medical Enquiries.

III. The first volume of Casper's Forensic Medicine.

IV. The second and concluding volume of Frerichs's Clinical Account of Diseases of the Liver. (The second volume of this work has not yet been published in the original. By the courtesy of its author and publishers, (who have supplied the sheets as printed off,) the Council will be enabled to have the translation ready almost simultaneously with the appearance of the work itself.)

V. A Second Fasciculus of the Atlas of Portraits of Skin Diseases, comprising Three Plates, illustrating
  Psoriasis Diffusa.
  Ichthyosis.
  Lupus Serpiginosus.
  Alopæcia Areata.

The subscription is Five Dollars and a Quarter, annually, to be paid in advance. Those members who have not yet paid their subscriptions for the current year are requested to do so as early as convenient.

Those desirous of joining the Society and of obtaining the works from the commencement, are requested to make early application. A list of the eleven works already published, with a report and other information, will be forwarded on application.

The publication of Vogel and Neubauer's work on the Examination of the Urine is deferred for a short time, in consequence of the expected appearance of a new edition of the original.

Richard J. Dunglison, M.D., 121 S. 10th St., is the Hon. Local Secretary for Philadelphia.

How to Spend Six Months in Paris.—The Parisian correspondent of the *London Lancet*, (Sept. 28, 1861,) among other very valuable suggestions to students visiting Paris, gives the following advice :—

"1st. Dedicate two months to M. Trousseau at the Hôtel-Dieu, and Nélaton at the Clinique.

"2d. Divide one month at the Charité between Messrs. Velpeau, Beau, Nonat, and Piorry, entering with one of the latter's *internes* to a course on auscultation and percussion, the price of which for daily attendance is about thirty francs.

"3d. Give one month to St. Louis and the study of skin diseases, following Hardy in preference to either Devergie or Gibert ; though, if the latter be lecturing, his course is excellent.

"4th. A month between the Ste. Eugénie and the Hôpital des Enfans Malades ; at the former following Barthez and Bouchut, at the latter Guersant.

"5th. The last month to be divided between the two venereal hospitals, the Lourcine and the Midi. M. Alphonse Guérin to be followed at the former ; and M. Cusco, the successor of M. Ricord, at the latter.

"During the day, the ophthalmic dispensaries of Desmarres and Sichel, and the dissecting-rooms, either of Clamart or of the École Pratique, may be attended, the cost being about £4 (100 francs) for a complete course of operative surgery and as much anatomical demonstration and dissection as the student is able to get through.

"I say nothing about attendance either upon the lectures of the Faculty, the private courses of the *internes*, or the École Pratique. I believe that it is from attendance on the hospital practice, and not from oral teaching, that the foreign student reaps most benefit. The session opens toward the middle of November."

THE PROFESSION IN GLASGOW.—"In no important town of the empire is the profession so poorly represented, as far as numbers are concerned, as in Glasgow. While the average of other cities, as Edinburgh, Manchester, Dublin, Belfast, etc., gives one medical attendant to every thousand persons, Glasgow can only show one for every two thousand. But this fact will cease to be wondered at when it is considered that in scarcely any—the smallest or poorest—village of Scotland are medical men so wretchedly ill paid as in rich, prosperous, flourishing Glasgow." —*Letter in Lancet.*

HONOR CONFERRED.—His Majesty the King of Denmark has been pleased to confer the honor of knighthood of the Order of the Danneberg upon JAMES SYME, ESQ., Professor of Clinical Surgery in the University of Edinburgh.

NECROLOGICAL NOTICES.

MR. JONES, OF JERSEY.—We deeply regret to have to announce the death of this surgeon, which took place on Saturday last, from the effects of typhus fever, caught in the discharge of his duties. Some three or four years ago, Mr. Jones was seized with partial paralysis and great prostration of the system, after having sat up for nearly thirty nights in succession, in attendance upon an old friend and patient. From the effects of this attack he never thoroughly recovered, although he benefited very much by a total abstinence from professional duties for some time, and by the care and attention bestowed upon him by his friend, the late Dr. Todd. He, however, returned to his practice, and entered upon his duties with undiminished ardor, but with a frame not capable of resisting contagion as it did formerly, and he died at his post, working to the last, as it became the man, and probably as he would have wished.

Perhaps there has been no surgeon out of the three metropolitan cities who has attracted greater attention, during the last ten years, than Mr. Jones. Up to 1850, his name was not known beyond the little island which was the scene of his surgical exploits; but about that time he signalized himself by the performance of several remarkably successful cases of excision of joints, especially of the knee, and by his practice and writings he contributed as much as any one to the rapid spread of conservative surgery. So anxious was Mr. Jones to encourage the operation of excision of the knee-joint instead of amputation, that he was at the trouble and expense of coming over to England with some of the poor patients upon whom he had operated, and a great impression was thus made in favor of this proceeding, about the merits of which there was at this particular time a great deal of warm discussion. In connection with this subject, it is right to mention that, although most undoubtedly the merit of reviving excision of the knee is due to Mr. Fergusson, the subject of this memoir adopted the operation a few weeks after Mr. Fergusson had first performed it, but without being aware of the fact. The success attending the operations of Mr. Jones was remarkable. When the writer of this notice last visited Jersey, Mr. Jones had performed fifteen excisions of the knee, with only one death. He performed on numerous occasions the excisions of the other joints with almost equal success, especially those of the hip and ankle. The most perfect result from the latter operation we have ever seen, was in the person of an adult operated upon by Mr. Jones a few years ago.

The well-known success following Mr. Jones's operations has been often attributed to the pure air of Jersey; but those who, like the writer, have had opportunities of watching Mr. Jones's practice, would be able to affirm with truth that the results were more owing to the assiduous care bestowed by the operator in the after-treatment of his cases. The hospital where most of his cases were operated upon was not well calculated for such a purpose; the wards were small, the beds were close together, and the ventilation was by no means good. Mr. Jones, however, used to support his patients well after operations, watched symptoms narrowly, and was most careful and gentle in dressing wounds. Hence the reason for the extraordinary success which undoubtedly followed his great surgical operations, and for the reputation which he most deservedly acquired during the last ten years of his life. His practice was considered by some to be bold, even to the verge of rashness, as, for instance, in the exhibition of half-ounce doses of tincture of digitalis for delirium tremens; but the results justified the practice.

His loss will be felt severely in the Island of Jersey, both by poor and rich, among whom he practiced for a period of thirty-five years; and those who knew him as a friend will readily admit that it will be difficult to find a man with a more thoroughly genial, honest, and unselfish nature.

The *Jersey Times* says of Mr. Jones, that his memory will be cherished as the memory of a kind and humane man—"A man who always had an encouraging word and a kindly smile for the poorest patient under his care—always a gentleness and a fatherly tenderness for the sick children sprinkled about the wards of the hospital.

"To record the fact of Mr. Jones's death is a work almost of supererogation; for the sorrowful tidings having spread with a rapidity which marks the universal reputation he had earned, as truly as the unqualified expression of regret which attended the information marks the deep respect in which he was held."—*London Med. Times and Gazette*, Sept. 14, 1861.

MR. CUSACK.—This eminent practitioner died on the night of the 26th of September, 1861, at his residence in Merrion-square, in the seventy-fourth year of his age. He was the head of the profession of surgeons in Ireland, and for many years occupied the most distinguished position connected with it in Dublin. His death causes many vacancies. He was a Fellow of the Royal College of Surgeons, of which he had been more than once president; he was consulting surgeon of Steevens's Hospital, and of Swift's Hospital, a member of the Board of Superintendence of Hospitals, and on the death of Sir Philip Crampton he was appointed Surgeon in Ordinary to the Queen. He also occupied the position of Regius Professor of Surgery in Trinity College. Until near the time of his death he continued to discharge his duties at the hospitals, and to see patients at his house. An attack of bronchitis baffled the skill of his medical attendants—the most eminent men in the city. He was regarded as one of the greatest ornaments of the medical profession in Ireland, and was held in the highest esteem by the public.—*Lancet*, Oct. 5, 1861.

WE regret to announce the death of the venerable PROFESSOR IVES, of Yale College, well known for a long series of years as an able and successful practitioner and professor. His graduation at Yale was nearly a third of a century since, and he became a professor almost half a century ago. He died in New Haven, at the age of eighty-four.

Bi-Monthly Bibliographical Record.

AMERICAN.

The Principles and Practice of Obstetrics. By Gunning S. Bedford, M.D. New York, 1861. (From the author.)

The Morbid Effects of the Retention in the Blood of the Elements of the Urinary Secretion. By William Wallace Morland, M.D., etc. 8vo. Philadelphia, 1861.

Lectures on the Diseases of Women. By Charles West, M.D. Second American edition. 8vo. Philadelphia, 1861.

FOREIGN.

The Diseases of the Prostate, their Pathology and Treatment. By Henry Thompson, F.R.C.S. 8vo. London, 1861.

The Parasitic Affections of the Skin. By T. Mc Call Anderson, M.D. 8vo. London, 1861.

The Causes and Treatment of Imperfect Digestion. By Arthur Leared, M.D. 12mo., pp. 218. London, 1861.

The Sounds Caused by the Circulation of the Blood. By the same author. pp. 22. London, 1861.

Memoirs of Marshall Hall, M.D., F.R.S., etc. By his Widow. London, 1861. pp. 518.

On Fibrinous Deposition in the Heart. By Dr. B. Richardson. London, 1860. pp. 42.

A Treatise on the Surgical Diseases of the Eye. By H. Haynes Walton, F.R.C.S., etc. Second edition. London, 1861.

Advice to a Mother on the Management of her Offspring. By P. C. Chavasse, F.R.C.S. Sixth edition. London. pp. 267.

Climates for Invalids, etc. By A. Taylor, M.D. Third edition. pp. 283. London.

On the Influence of Light and Darkness on the Development, Growth, and Nutrition of Animals. By Horace Dobell, M.D. Reprint.

Bardeleben, Prof. A. Lehrbuch der Chirurgie und Operationslehre. 8vo. Berlin, 1861.

Scanzoni, Prof. F. W. Compendium der Geburtshülfe. 8vo. Wien, 1861.

Witmaack, Th. Lehrbuch der Arzneimittellehre. 8vo. Leipzig, 1861.

Bazin. Leçons sur la Scrofule considérée en elle-même et dans ses rapports avec la syphilis, etc. 2e édition. 8vo. Paris.

Bouillaud. De la congéstion cérébrale apoplectiforme dans ses rapports avec l'épilepsie. 8vo. Paris.

Lunel, A. B. Dictionnaire universel de médecine. T. 1. 1re partie. 12mo. Paris.

Coulon, le docteur A. Traité clinique et pratique des fractures chez les enfants; revu et précédé d'une préface par le docteur Marjolin. 8vo. Paris.

Duchenne (de Boulogne), le docteur G. B. De l'Électrisation localisée et de son application à la pathologie et à la thérapeutique. 2e édition, 8vo. Paris.

Fuster, J. Monographie clinique de l'affection catarrhale. 8vo. Paris.

Gallavardin, le docteur. Projet d'hôpitaux mixtes allopathiques et homœopathiques; projet de dispensaires mixtes; mémoire addressé à MM. les administrateurs des hôpitaux. 8vo. Paris.

Guardia, le docteur J. M. De l'étude de la folie. 8vo. Paris.

Hiffelsheim, le docteur. Des applications medicales de la pile de Volta, etc. 8vo. Paris.

Barrallier, le docteur A. M. Du typhus épidémique et histoire médicale des épidémies de typhus observées au bagne de Toulon en 1855 et en 1856. 8vo. Paris.

Bastin, le docteur A. De la congestion utérine pendant la grossesse. 4to. Paris.

Chassaignac, E. Traité clinique et pratique des opérations chirurgicales, ou Traité de thérapeutique chirurgicale. T. 1. 8vo. Paris.

Devay, Francis. De la médecine morale, précédée de réflexions sur la pratique de la médecine en général. 8vo. Paris.

Edwards, Milne. Leçons sur la Physiologie et l'anatomie comparée de l'homme et des animaux. Tome 6, 2e partie. Appareil Digestif. 8vo.

Giraud-Teulon, le docteur F. Physiologie et pathologie fonctionnelle de la vision binoculaire, suivies d'un aperçu sur l'appropriation de tous les instruments d'optique à la vision avec les deux yeux, l'opthalmoscopie et la stéréoscopie. 8vo. Paris.

Issartier, le docteur F. De l'alcoolisme moderne. 8vo. Paris.

Ladreit de Lacharrière, le docteur J. Des paralysies syphilitiques. Grand 8vo.

Métaxas, le docteur S. J. De l'exploration de la rétine et des altérations de cette membrane visibles à l'opthalmoscope. 4to., avec 3 planches.

Gourdin, A. H. C. Du traitement de la tuberculose. 4to.

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